



INSTITUTE FOR DEFENSE ANALYSES

## **Review of CBRN Medical and Operational Terminologies in NATO CBRN Publications**

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## **Executive Summary**

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Since 1994, the Institute for Defense Analyses (IDA) has supported the U.S. Army Office of the Surgeon General (OTSG) in the Medical Chemical, Biological, Radiological, and Nuclear (CBRN) Defense Planning and Response Project in its planning, preparation, and exercises to defend against CBRN weapons used against U.S. military personnel. The objective of the project is to ensure the integration and maintenance of CBRN medical concepts in existing North Atlantic Treaty Organization (NATO) programs. As part of this objective, the sponsors asked IDA to review and compare the terminology used in the NATO publications related to medical CBRN defense and operational CBRN defense for consistency. The use of the correct terminologies in NATO CBRN defense publications is deemed highly important because of the need to have clear and unambiguous communication among the NATO members and partner nations.

To complete the task, the IDA team identified and reviewed 12 NATO publications related to medical and operational CBRN defense. From these NATO publications, a collection of terminologies were compiled to develop two different lexicons, one for terms and definitions (see Appendix A) and a second one for abbreviations (see Appendix B). In compiling the lexicons, the use of certain terms and abbreviations were analyzed and summarized in this paper, along with recommendations when the terminologies do not align. A complete list of recommendations can be found in the Conclusions and Recommendations section.

In reviewing the compiled lexicon, the IDA team found that a large percentage (>80%) of terms and definitions are not standardized, while a smaller percentage (~70%) of abbreviations are also not standardized. There are multiple reasons for such a large number of terminologies to be non-standardized and the reasons will be discussed in this paper. This analysis leads to the conclusion that the NATO members and partner nations should make every effort to use NATO-agreed terminology in NATO publications and to identify and submit commonly used terminologies to the NATO Terminology Programme (NTP) for standardization.



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# 1. Introduction

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Since 1994, the Institute for Defense Analyses (IDA) has supported the U.S. Army Office of the Surgeon General (OTSG) in the Medical Chemical, Biological, Radiological, and Nuclear (CBRN) Defense Planning and Response Project in its planning, preparation, and exercises to defend against CBRN weapons use against U.S. military personnel. The objective of the project is to ensure the integration and maintenance of CBRN medical concepts in existing North Atlantic Treaty Organization (NATO) and U.S. programs. As part of this objective, the sponsors asked IDA to review and compare the terminology used in the NATO publications related to medical CBRN defense and operational CBRN defense for consistency. Specifically, they wanted IDA to develop a lexicon of CBRN terms and abbreviations, and discuss how the terminologies are used consistently or differently within the NATO CBRN publications.

The NATO Terminology Office (NTO) advocates clear and unambiguous communication among its members and partner nations, following the NATO Policy for Standardization in 2000, which states that "NATO documents must contain NATO agreed terminology."<sup>1</sup> It is the NATO Terminology Programme (NTP) that provides standardized terminology, stamped with the "NATO Agreed" status to all NATO terminologies that are used in NATO documents and communications of all kinds.<sup>2</sup> New terminologies are proposed for standardization at any time and go through a series of steps in the NTP standardization process before receiving agreed status.

Since standardization of NATO terms is an ongoing process, there are terms that might not be standardized yet, defined differently, or used in a completely different context. The goal of this effort was two-fold: (1) to develop a comprehensive lexicon of terms and definitions and a comprehensive lexicon of abbreviations used in NATO CBRN medical and operational defense publications, and (2) to compare medical and operational terminologies to determine similarities and differences in their usage.

## A. Terminology

NATO terminology includes terms, definitions, and abbreviations. Based on the NATO Terminology Directive 2015, "The NTP shall apply to terms that need to be

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<sup>1</sup> North Atlantic Treaty Organization (NATO), *NATO Terminology Directive, Action Sheet*. Document PO(2015)0193-AS1 (Brussels, Belgium: NATO, 16 April 2015).

<sup>2</sup> Ibid.

understood and used correctly in the Alliance, together with their abbreviations and the definitions of the concepts they designate. The NTP shall not apply to symbols, codes, formulas, icons, nicknames, pictures, diagrams, or other graphic representations.”<sup>3</sup> The official NATO reference dictionaries are the Concise Oxford English Dictionary and Le Petit Robert in English and French.<sup>4</sup>

## 1. Description of Terminology Components

The descriptions of the key components of the NATO terminology are provided in the “*Guidance for the Development and Publication of NATO Terminology*”<sup>5</sup> and summarized below:

- In NATO standardization, *terminology* is the body of terms and their abbreviations, together with the definitions of the concepts that they designate, used in a given discipline, file or subject.<sup>6</sup>
- A *designation* may be a term or an abbreviation.<sup>7</sup>
- A *term* is a designation of a concept in a specific subject field. It consists of one or more words.<sup>8</sup>
- A *definition* is the formal description of a concept that provides the minimum amount of information that allows one to recognize and differentiate that concept from another.<sup>9</sup>
- An *abbreviation* is a designation formed by omitting words or letters from a longer form, called the full form, and representing the same concept. The full form is often an existing or new simple or complex term. There are seven types of abbreviations:<sup>10</sup>
  - An *initialism* is an abbreviation made up of the first letter of each or some of the components of the full form and pronounced letter by letter. (i.e., WIA stands for wounded in action)

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<sup>3</sup> Ibid, pg. 4.

<sup>4</sup> NATO, AAP-06: *NATO Glossary of Terms and Definitions (English and French)*, AAP-06(2015), (Brussels, Belgium: NATO, 2015).

<sup>5</sup> NATO, *Guidance for the Development and Publication of NATO Terminology*, Document C-M(2007)0023 (Brussels, Belgium: NATO, 2007).

<sup>6</sup> *NATO Terminology Directive*, pg. A-2.

<sup>7</sup> *Guidance for the Development and Publication of NATO Terminology*, pg. 5.

<sup>8</sup> Ibid, pg. 8.

<sup>9</sup> Ibid, pg. 13.

<sup>10</sup> Ibid, pg. 31.

- An *acronym* is an abbreviation made up of the initial letters of the components of the full form of the designation or from syllables of the full form and pronounced syllabically. (i.e., NATO stands for North Atlantic Treaty Organization)
- A *shortening* is an abbreviation made up of the first letter and possibly one or more other letters of a word or simple term. (i.e., p. stands for page)
- A *short form* is an abbreviation of a complex term, made up of fewer words or several letters or syllables from the full form. Short forms are dealt with as terms and not abbreviations in the NTP. (i.e., NC3 Board stands for NATO Consultation, Command and Control Board)
- A *clipped term*, also called *clipped form*, is an abbreviation that is formed by truncating a simple term and that has become a synonymous term. Clipped term is dealt with as a term and not an abbreviation. (i.e., demo stands for demonstration)
- A *symbol* is a mark, character, icon, or picture used as a conventional or visual representation of a concept. Symbols are not dealt with in the NTP. (i.e., mV stands for millivolt)
- A *code* is a system of words, letters, figures, or symbols used to represent concepts. Codes (with some exceptions such as country codes) are not normally dealt with in the NTP. (i.e., GBR stands for United Kingdom of Great Britain and Northern Ireland)
- A *NATO glossary* is a NATO standard promulgated as an Allied Publication (AP) covered by a NATO standardization agreement, containing NATO Agreed terminology and, when appropriate, standardized or coordinated abbreviations, usually relating to a specific subject field.<sup>11</sup>
- A *lexicon* is a list included in or annexed to a NATO document. It contains terms, their definitions and abbreviations, and their full forms used in that document.<sup>12</sup>

## 2. The Terminology Standardization Process

The terminology developed in a NATO document does not automatically receive NATO Agreed status once the document is approved, ratified, or notated by the North Atlantic Council (NAC). It is the responsibility of the custodian or drafter of a NATO

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<sup>11</sup> Ibid, pg. 41.

<sup>12</sup> Ibid, pg. 71.

document to ensure that the terminology and the document from which it is extracted are developed and approved concomitantly.<sup>13</sup> However, all NATO members and partner nations, committees, agencies, staffs, and commands may identify a need to standardize terminology and submit a proposal to add, modify, or delete NATO agreed terminology.

There are several senior committees responsible for specialized areas that report directly to the Alliance's supreme body, the NAC, that have various responsibilities in the terminology standardization process. They include the Military Committee, who are responsible for military policy and doctrine, and the Committee of Standardization, which is responsible to establish NATO's terminology policy and approve the NATO Terminology Manual and associated documents, and is also the governing authority of the NSA. In addition, there are committees that deal with specialized areas, including air defence, civil emergencies, budgets, logistics, and medical services. All of these bodies are empowered to validate standardization objectives and proposals, to establish the related standardization tasks, and to produce, endorse, and maintain the resulting standardization documents. They have subordinate bodies that they can task to develop standards on their behalf; hence, they are known as "tasking authorities" (TAs).

Each TA is responsible for selecting or developing, maintaining, and approving NATO terminology in its domain of competence. Specifically, a TA shall 1) ensure that its terminology is proposed, coordinated, and harmonized with the assistance of the NTO at each stage of the development process; 2) review and monitor on a continuous basis all terminology under its purview; 3) appoint one or more point(s) of contact to act as its Tasking Authority Terminology Coordinator(s) (TATC(s)); 4) approve its terminology in both official languages by consensus, thus conferring NATO Agreed status to its terminology; and 5) provide its views to the NTO on all aspects of the NTP.

A TATC acts as the point of contact for terminology matters and coordinates terminology proposals under the purview of their TA. The TATC acts as the liaison among the stakeholders<sup>14</sup> for the terminology being developed in their TA and provide advice to custodians and subject matter experts on terminology matters. The TATC ensures that custodians and the specialist groups under their TA develop the necessary terminology proposals and submit them for NATO agreement before the source document is promulgated or otherwise released. The TATC also helps custodians develop lexicons for their documents, using the most up-to-date terminology.

The NTO is responsible for coordinating, supporting, and administering the NTP. It is the custodian of and develops, reviews, and updates the NATO Terminology Directive and its associated documents. The NTO ensures that the NTO rules are properly and fully

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<sup>13</sup> *NATO Terminology Directive*, pg. 10.

<sup>14</sup> The stakeholders are the NTO, other TATCs, subject-matter experts, custodians, and drafters.

implemented throughout NATO and performs quality assurance on each terminology proposal. It identifies and addresses possible duplication of effort, deficiencies, and inconsistencies and proposes solutions. The NTO coordinates the terminology being developed by the TAs and identifies the approving TA for each terminological entry.

The process to standardize NATO terminology through the NTP includes five steps:<sup>15</sup>

- Step 1: Submission of the terminology proposal – Any user of NATO terminology may identify a need to standardize terminology and submit a proposal to add, modify, or delete NATO Agreed terminology. The originator of that proposal is referred to as the initiator.
- Step 2: Assessment of its requirements – The initiator shall search for the relevant terminology in the NATOTerm and the official NATO reference dictionaries to determine whether there is a requirement to add, modify, or delete the terminology.
- Step 3: Development and review of the terminology proposal – The initiator shall develop a proposal and, to ensure consistency, take account of existing entries in NATOTerm. The NTO shall perform quality assurance on the proposal and ensure that it is bilingual.
- Step 4: Approval of the terminology proposal – The NTO shall send the Terminology Tracking Form (TTF) to the appropriate approving authority for approval or rejection.
- Step 5: Promulgation of the approved terminology.

The full details on the process by which NATO terminology is standardized is outside the scope of this paper. More information regarding the terminology approval procedure can be found in the NATO Terminology Manual.<sup>16</sup>

To manage the terminology proposal process, a TTF is prepared for each terminology. It contains details of the proposer, the proposal, discussions from various groups, and the decisions made. Each entry in the database is therefore linked to a TTF. It is a permanent document that is maintained throughout the life of an entry, as it also records any later modifications or its deletion. It enables the actors in the program to see the complete history of an entry. TTFs are even kept for proposed entries that have been rejected or deleted.

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<sup>15</sup> Ibid.

<sup>16</sup> NATO, *Draft of NATO Terminology Manual*, (Brussels, Belgium: NATO, 2016), pg. Part II – 65.

### 3. Entry Status Designations

Each NATO term and abbreviation that has gone through the NTP standardization process or is going through the process is given a status designation. Not all terminology used in a NATO document or added to a lexicon has an official status. Terms or abbreviations that do not have an official status have not gone through the terminology standardization process.

The status designations and their descriptions are as follows:

- *NATO Agreed* denotes an entry that has been approved in both official languages of NATO by the consensus of the NATO member nations, through the NTP. Terminology with the “NATO Agreed” status is the official NATO terminology to be used in all NATO documents.
- *Not NATO Agreed* denotes an entry that is still undergoing the NTP standardization process. Most of the entry was developed in both NATO official language or some was developed in English only. The relevant senior committees are responsible for making this entry “NATO Agreed.”
- *Cancelled* or *Deleted* denotes an entry that is no longer current but still appears in NATOTerm or NTMS. Previously NATO-Agreed terminology that is no longer valid or for which it was decided that NATO-specific terminology was no longer needed. Terminology is assigned this status following approval of a deletion proposal.

A term with a definition that is a verbatim quotation from one of the reference dictionaries<sup>17</sup> does not require NATO agreement and is indicated as “NATO Agreement not required.”

A term that is proposed to go through the NTP standardization process has the following status descriptions:

- *Submitted* for NATO agreement denotes an entry that is submitted to the NTP for review.
- *Addition* denotes a new entry to be added to NATOTerm.
- *Modification* denotes a NATO Agreed entry to be changed in NATOTerm.
- *Deletion* denotes a NATO Agreed entry to be deleted from NATOTerm.
- *Revalidation* denotes a NATO Agreed entry to be reconfirmed in NATOTerm

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<sup>17</sup> The NATO reference dictionaries are the Concise Oxford English Dictionary and Le Petit Robert in English and French.

## B. NATO Terminology Databases and Glossaries

### 1. NATO Terminology Databases

The NATO Terminology Management System (NTMS) contains non-classified NATO Agreed terminology, as well as terminology under development. It is the central repository for NATO terminology and is used to search terms, abbreviations, and definitions found in NATO documents, communications, and activities of all kinds. It can be accessed through the NSO extranet sites, and through the password-protected internet site. It is a visible element of the NTP and the medium through which terminology is stored and shared throughout NATO.

The NTMS is replaced by a new system called “NATOTerm,” which allows for improved terminology management as well as wider dissemination of NATO Agreed terminology as it is available to the public through the internet. The NATOTerm database contains non-classified military and non-military terminology relevant to NATO. The migration of data from the NTMS database to the NATOTerm database is expected to be complete by the end of 2015. Since the migration should be complete at this point, the IDA team will use the NATOTerm database as the main NATO terminology database to verify the status of the terminology for this paper. Since the NTMS is superseded by the NATOTerm database, the IDA team recommends that the authors of NATO publications should refer to the NATOTerm database exclusively.

### 2. NATO Terminology Glossaries

The NATO Terminology databases contain NATO Agreed terminology from several NATO glossaries, but of particular interest to this paper are *AAP-06: NATO Glossary of Terms and Definitions*<sup>18</sup>, *AAP-15: NATO Glossary of Abbreviations Used in NATO Documents and Publications*<sup>19</sup>, and *AAP-21: NATO Glossary of Chemical, Biological, Radiological and Nuclear Terms and Definitions*<sup>20</sup>. In addition, the databases also contain NATO Agreed terminology from specialist domains and other specialized NATO glossaries, including *NATO Glossary of Medical Terms and Definitions (English) Allied Medical Publication (AMedP)-13(A)*<sup>21</sup> and *Joint CBRN Defence Capability*

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<sup>18</sup> NATO, *AAP-06: NATO Glossary of Terms and Definitions (English and French)*, AAP-06(2015), (Brussels, Belgium: NATO, 2015).

<sup>19</sup> NATO, *AAP-15: NATO Glossary of Abbreviations Used in NATO Documents and Publications*, AAP-15(2015), (Brussels, Belgium: NATO, 2015).

<sup>20</sup> NATO, *AAP-21: NATO Glossary of Chemical, Biological, Radiological and Nuclear Terms and Definitions*, AAP-21(2006), (Brussels, Belgium: NATO, 2006), CANCELLED.

<sup>21</sup> NATO, *AMedP-13(A): NATO Glossary of Medical Terms and Definitions*, STANAG 2409 (Brussels, Belgium: NATO, 6 May 2011)

*Development Group (JCBRND-CDG) DTP Lexicon*,<sup>22</sup> which is of particular interest to this paper.

**a. AAP-06**

AAP-06 is a compilation of 1) general terminology with specific military meanings, 2) specialized terminology that needs to be widely understood throughout NATO, and 3) terminologies that are not defined adequately in the NTP reference dictionaries. The purpose of AAP-06 is to promote mutual understanding and strengthen the Alliance's defense capabilities. AAP-06 is updated and made available annually. For this paper, the IDA team used the 2015 edition for reference.

**b. AAP-15**

AAP-15 is a compilation of abbreviations commonly found and used in NATO documents and publications. The purpose of the glossary is to provide a comprehensive list of the most commonly found and used NATO abbreviations and to encourage authors to use correct and standardized abbreviations and full forms when drafting documents or correspondence. The AAP-15 is updated once a year on the basis of the NATO Agreed terminology proposals. For this paper, the IDA team used the 2015 edition for reference.

**c. AAP-21**

AAP-21 is a compilation of terminology used in NATO chemical, biological, radiological, and nuclear defense activities, documentation, and communications. The definitions provided in the glossary do not modify or establish NATO policy and doctrines but help to express them more clearly. The first edition of the glossary (AAP-21 (A)) was published in 2004 and was superseded by the second edition in 2006 (AAP-21(B)). The second edition was cancelled before the following edition was promulgated. Although AAP-21 has been cancelled, the NTMS cites AAP-21 as the source for many terminologies used in the NATO CBRN publications that are reviewed in this paper.

**d. AMedP-13**

AMedP-13 is a compilation of medical terms for use in NATO medical publications, correspondence, and staff work and their functions. The glossary concentrates on key medical terms and definitions that are used in NATO medical planning and found in existing Allied Publications and Standardization Agreements (STANAGs). The glossary is updated regularly but not annually.

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<sup>22</sup> NATO, *Joint CBRN Defence Capability Development Group (JCBRND-CDG) DTP Lexicon* (Brussels, Belgium: NATO, May 2015)



**e. Joint CBRN Defence Capability Development Group (JCBRND-CDG) DTP Lexicon**

The Joint CBRN Defence Capability Development Group DTP lexicon was put together by the Doctrine and Terminology Panel of the Joint CBRN Defence Capability Development Group (JCBRND-CDG) that includes both the NATO Agreed terminology and the CBRN-related terminology that the JCBRND-CDG working group agreed on during the March 2016 working group meeting.<sup>23</sup>

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<sup>23</sup> The status of the CBRN DTP Lexicon was a draft final at the time this paper was prepared.



## 2. NATO CBRN Publications

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This chapter identifies and briefly describes NATO CBRN publications that were used to assemble the comprehensive lexicons of terms and definitions, and abbreviations pertaining to medical CBRN and operational CBRN defense. This chapter also provides some context for understanding how the terminology is chosen and briefly discusses some assumptions and limitations of the analysis.

The NATO CBRN publications that were reviewed and analyzed are listed in Table 1. There are three categories of publications. The official NATO glossaries that were described in the previous chapter served as references to the terminologies found in the reviewed NATO CBRN publications. All terms, definitions, and abbreviations found in the NATO CBRN publications were cross-referenced to the list of official NATO glossaries and databases. The NATOTerm and NTMS databases were the final references used to determine the status of the collected terminologies.

The IDA team found seven NATO medical CBRN defense publications and five NATO operational CBRN defense publications that are relevant to this analysis. A description of each publication is provided in the next section.

**Table 1. NATO CBRN Publications**

<b>Official Glossaries</b>	<b>Medical Related</b>	<b>Operational Related</b>
NTMS	AJP-4.10	AJP-3.8 SD3
NATOTerm	AJMedP-7	AEP-45
AAP-06	AMedP-7.1 SD4	AEP-66
AAP-15	AMedP-7.3	AEP-72
AAP-21	AMedP-7.4	ATP-45
AMedP-13	AMedP-7.5 SD3	
CBRN DTP Lexicon	AMedP-7.6 SD2	

Most, but not all, of the NATO CBRN publications have a glossary of terms and definitions and/or a glossary of abbreviations. Table 2 summarizes which NATO CBRN publications provided at least one or both types of glossaries or no glossaries at all.

**Table 2. NATO CBRN Publications Glossary Checklist**

<b>NATO Publication</b>	<b>Terms and Definition Glossary</b>	<b>Abbreviation Glossary</b>
AJP-4.10	No	Yes
AJMedP-7	Yes	Yes
AMedP-7.1 SD4	No	No
AMedP-7.3	No	No
AMedP-7.4	Yes <sup>a</sup>	Yes <sup>a</sup>
AMedP-7.5 SD3	Yes <sup>b</sup>	Yes
AMedP-7.6 SD2	No	Yes
AJP-3.8 SD3	Yes	Yes
AEP-45	Yes	No
AEP-66	Yes	Yes
AEP-72	No	Yes
ATP-45	Yes	Yes

<sup>a</sup> The terms and definitions are presented in Chapter 1 of the publication instead of in an appendix.

<sup>b</sup> The terms and definitions are presented in Chapter 1 of the study draft (SD) instead of in an appendix.

The terminologies from both types of glossaries provided in the publications listed in Table 2 are included in the comprehensive lexicons for this paper. Additionally, the IDA team also thoroughly read through all of the 12 reviewed publications to collect terminologies for the comprehensive lexicons. It should be noted that a term that is used in a publication without a clear definition or an abbreviation that is used in a publication without a clear full form are not added to the lexicons. Only terms with definitions, and abbreviations with full forms found in the publications are included in the comprehensive lexicons.

## **A. Brief Description of the NATO CBRN Publications**

### **1. NATO CBRN Medical Publications**

#### **a. AJP-4.10(A): Allied Joint Medical Support Doctrine<sup>24</sup>**

Allied Joint Publication 4.10 builds on the key themes set out in AJP-01(D) Allied Joint Doctrine and provides an authoritative basis for medical support to NATO operations. As stated in the preface of the doctrine, the purpose of the publication is to set out “the fundamental principles required to plan and conduct medical support to NATO operations

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<sup>24</sup> NATO, *AJP-4.10: Allied Joint Doctrine for Medical Support*, Edition B Version 1, AJP-4.10 (Brussels, Belgium: NATO, May 2015), iv.

in all its aspects. Medical support remains a national responsibility, but in practice NATO commanders have come to share this responsibility during recent operations. This brings with it a range of additional responsibilities ranging from the treatment of casualties in different operating environments to the implementation of force health protection measures, interactions with civil organizations providing health services to affected populations, and the increased public expectations of high quality outcomes in the treatment of casualties.”<sup>25</sup>

“NATO medical support doctrine is deliberately written to allow considerable flexibility in its application. It does not deliberately reflect or exclude any particular nation’s approach to medical support. It does, however, constitute a basic framework upon which to base alliance operational medical support should be based. Fundamentally, it encourages close cooperation to be undertaken between member Nations, even if some differences in national doctrines exist.”<sup>26</sup>

#### **b. AJMedP-7: Allied Joint Medical Doctrine for Support to CBRN Defensive Operations<sup>27</sup>**

The Allied Joint Medical Publication 7 is the medical planning doctrine for NATO multinational joint CBRN defense. It provides “the framework for medical aspects of CBRN defense planning as well as for the operational planning process in all categories and at all levels of combined joint operations. This document is applicable to peace and the full spectrum of NATO operations from crisis through conflict.”<sup>28</sup> This doctrine is subsidiary to AJP-4.10 and provides a compilation of CBRN-specific medical planning considerations to supplement existing doctrine.

#### **c. AMedP-7.1 SD.4: Medical Management of CBRN Casualties<sup>29</sup>**

Allied Medical Publication 7.1 discusses principles of casualty management and provides guidance to tactical level medical personnel and first responders on the medical care required for casualties in a CBRN environment. More specifically, the publication aims to guide CBRN casualty management from the point of exposure through to a role 3 Medical Treatment Facility; role 4 is beyond the scope of the publication. AMedP-7.1

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<sup>25</sup> Ibid, iv.

<sup>26</sup> Ibid.

<sup>27</sup> NATO, *AJMedP-7: Allied Joint Medical Doctrine for Support to Chemical, Biological, Radiological, and Nuclear (CBRN) Defensive Operations*, Edition A Version 1, AJMedP-7 (Brussels, Belgium: NATO, August 2015).

<sup>28</sup> Ibid, 1-2.

<sup>29</sup> NATO, *AMedP-7.1: Medical Management of CBRN Casualties*, Edition A Version 1 Study Draft 4, AMedP-7.1 SD 4 (Brussels, Belgium: NATO, 2015).

focuses on the delivery of medical countermeasures and casualty care, and post-incident response. The publication also provides information on medical recognition, health surveillance, and operational epidemiology by deployed medical personnel in the case of covert CBRN incidents. The doctrine further provides a template for a CBRN casualty report form for use in field documentation of casualty signs and symptoms.<sup>30</sup>

**d. AMedP-7.3: Training of Medical Personnel for CBRN Defence<sup>31</sup>**

Allied Medical Publication 7.3 describes the training requirement for deployed medical personnel who provides CBRN medical support on NATO operations. The exact approach to providing a comprehensive CBRN medical training program to deployed CBRN medical personnel may vary among the partner nations but AMedP-7.3 provides the overarching framework to train medical personnel for CBRN defense.

**e. AMedP-7.4: Regulations for Establishment and Employment of MRIIT (Medical Radiological Incident Investigation Teams)<sup>32</sup>**

Allied Medical Publication 7.4 provides the necessary framework for NATO policy to create Medical Radiological Incident Investigation Teams (MRIITs) for medical evaluation and initial response following radiological incidents. MRIITs are national or international teams, constituted on a single-nation or multi-nation basis. MRIITs investigate and provide advice on the medical management of incidents in which radionuclides may have been released into the area of operation and might affect military personnel. To support the Commander, MRIITs perform sampling of any relevant material; provide diagnosis after exposure and radiation dose estimation; provide advice on the use of personal protective garments and decontamination equipment and supplies; provide advice to medical authorities; identify, review, and advise medical personnel on therapeutic interventions and contamination control measures; and act as a liaison between the on-scene commander and supporting medical treatment facilities.

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<sup>30</sup> This report is a variant of the standard NATO Medical Field Card provided in STANAG 2132 (AMedP-8.1), *Documentation Relative to Initial Medical Treatment and Evacuation*.

<sup>31</sup> NATO, *AMedP-7.3: Training of Medical Personnel for CBRN Defence*, Edition A Version 1, AMedP-7.3 (Brussels, Belgium: NATO, March 2015).

<sup>32</sup> NATO, *AMedP-7.4: Regulations for Establishment and Employment of MRIIT (Medical Radiological Incident Investigation Teams)*, Edition A Version 1, AMedP-7.4 (Brussels, Belgium: NATO, November 2013).

**f. AMedP-7.5 SD3: NATO Planning Guide for the Estimation of CBRN Casualties<sup>33</sup>**

Allied Medical Publication 7.5 describes the general methodology military planners can use to estimate casualties from CBRN weapons. The methodology depends on national hazard prediction models for its inputs on the amount of CBRN agent or effect present over time at icons (groups of co-located individuals) in the scenario. The methodology then characterizes human responses to exposure as a stepwise function of injury severity over time, called an injury profile. Based on the available data for chemical, radiological, and nuclear agents and effects, clinically distinguishable dose/dosage/insult ranges are developed for each agent or effect, and injury profiles are drawn for all ranges. Five submodels are combined to determine the number of casualties over time following a biological agent challenge. The submodels are the infectivity submodel, the incubation period submodel, the duration of illness submodel, the disease profile submodel, and the lethality submodel. Individuals are considered casualties at the time the injury profile first reaches a user-defined injury severity level for any type of CBRN agent or effect. A Standards Related Document (SRD) titled “*Technical Reference Manual to Allied Medical Publication 7.5 (AMedP-7.5) NATO Planning Guide for the Estimation of CBRN Casualties*” is a supplemental document to AMedP-7.5 that contains detailed reasoning behind the analytic decisions, assumptions, limitations, and constraints built into the methodology described in AMedP-7.5. The terminologies from this supplemental document are not reviewed in this paper.

**g. AMedP-7.6 SD2: Commander’s Guide to Medical Operations in Support of CBRN Defensive Operations<sup>34</sup>**

Allied Medical Publication 7.6 is intended to provide guidance for planning CBRN medical operations. “AMedP-7.6 encompasses all aspects of CBRN medical support at the operational level, with specific attention given to the flow of resources, information, and casualties to, from, and among medical units.”<sup>35</sup> The publication “provides commanders, staffs, and medical advisors guidance on the medical implications of action taken in all phases of operations to mitigate the effects of CBRN incidents.”<sup>36</sup> AMedP-7.6 is intended to be used in conjunction with other Allied CBRN medical doctrine, including AMedP-7.1 and AMedP-7.5. AMedP-7.6 links these two NATO CBRN medical doctrines by

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<sup>33</sup> NATO, *AMedP-7.5: NATO Planning Guide for the Estimation of CBRN Casualties*, Edition A Version 1 Study Draft 3, AMedP-7.5 SD 3 (Brussels, Belgium: NATO, March 2016).

<sup>34</sup> NATO, *AMedP-7.6: Commander’s Guide to Medical Operations in Support of CBRN Defensive Operations*, Edition A Version 1 Study Draft 2, AMedP-7.6 SD 2 (Brussels, Belgium: NATO, June 2016).

<sup>35</sup> Ibid.

<sup>36</sup> Ibid.

describing the role, responsibilities, and medical capabilities to directly support the planning function. The collaborative application of these three doctrines promote the interoperability of the medical components of the force. AMedP-7.6 is also used in conjunction with supporting Allied Joint Doctrines AJP-3.8 and AJP-4.10.

## **2. NATO CBRN Operational Doctrines**

### **a. AJP-3.8 SD3: Allied Joint Doctrine for Comprehensive Chemical, Biological, Radiological, and Nuclear Defence<sup>37</sup>**

Allied Joint Publication 3.8 is the main CBRN defense doctrine for NATO. The doctrine “provides strategic and operational commanders with guiding principles for the planning, execution and support of NATO operations where there is the threat or actual use of CBRN.”<sup>38</sup> This is the third study draft of AJP-3.8 Edition B Version 1 and it supersedes AJP-3.8 (A). The approach of the doctrine differs from its predecessor in that it adopted the three-pillar approach to Weapons of Mass Destruction (WMD) non-proliferation and CBRN defence. The three pillars are prevent, protect, and recover. The implementation of the three-pillar approach exploits the full spectrum of traditional CBRN defensive measures and capabilities within NATO and other tasks, “such as NATO support to reinforcing arms control regimes, promoting disarmament, supporting multilateral non-proliferation agreements and monitoring of the CBRN threat.”<sup>39</sup> The document also discusses a principal goal of the Alliance to prevent proliferation of WMD and developed a conceptual framework for a credible, coherent, and broad-based NATO CBRN defence capability.

### **b. AEP-45: Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents (Reference Manual)<sup>40</sup>**

Allied Engineering Publication 45 is the reference manual that supports *ATP-45(E): Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents (Operators Manual)*<sup>41</sup> which specifies the operational view of warning,

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<sup>37</sup> NATO, *AJP-3.8: Allied Joint Doctrine for Comprehensive Chemical, Biological, Radiological, and Nuclear Defence, Edition B Version 1*, AJP-3.8 SD 3 (Brussels, Belgium: NATO, 2015).

<sup>38</sup> *Ibid*, xi.

<sup>39</sup> *Ibid*.

<sup>40</sup> NATO, *AEP-45: Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents (Reference Manual)*, Edition D Version 1, AEP-45 (Brussels, Belgium: NATO, Janauray 2015).

<sup>41</sup> NATO, *ATP-45: Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents (Operators Manual)*, Edition E Version 1, ATP-45 (Brussels, Belgium: NATO, 2014).



reporting, and predicting CBRN incidents. This document specifies “requirements and functional specifications for CBRN informational constructs, activities, and functionality necessary for: 1. Reporting of all chemical, biological or radiological incidents and nuclear detonations and the resulting contamination, 2. Prediction and warning of hazard areas from CBRN incidents, 3. Evaluation of CBRN information and the influence of CBRN incidents on operations, and 4. Interchange of reports, quoted in 1, 2, and 3 above, between NATO forces and national military and civil authorities and agencies.”<sup>42</sup>

**c. AEP-66: NATO Handbook for Sampling and Identification of Biological, Chemical and Radiological Agents (SIBCRA)<sup>43</sup>**

Allied Engineering Publication 66 provides procedural guidance for sampling and identification of biological, chemical, and radiological agents in support of NATO operations. The document focuses on sampling and identification to provide unequivocal proof of the CBRN agent used and its identity. The handbook discusses operational aspects of forensic SIBCRA missions and application of SIBCRA elements to sampling and identification for operational purposes. The document gives primary principles of sampling and CBRN agent identification, with consideration of relevant technical and scientific issues and with a translation to suggested practical procedures. The handbook provides the technical basis for SIBCRA operations and it describes the personnel, training, equipment, and procedures required to conduct SIBCRA missions.

**d. AEP-72: Chemical, Biological and TIC Challenge Levels, Volume 1: Recommended Challenge Level<sup>44</sup>**

Allied Engineering Publication 72 Volume 1 recommends deposition and dosage levels of chemical agents, biological agents, and toxic industrial chemicals (TIC) to which protective equipment and procedures for NATO forces should be designed to allow unaffected operations. These challenge levels are intended to provide design guidelines and are not to be used for risk assessment.

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<sup>42</sup> NATO, *AEP-45: Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents (Reference Manual)*, Edition D Version 1, AEP-45 (Brussels, Belgium: NATO, 20015), 1-1 – 1-2.

<sup>43</sup> NATO, *AEP-66: NATO Handbook for Sampling and Identification of Biological, Chemical, and Radiological Agents (SIBCRA)*, Edition A Version 1, AEP-66 (Brussels, Belgium: NATO, April 2015).

<sup>44</sup> NATO, *AEP-72: Chemical, Biological and TIC Challenge Levels*, Edition A Version 1, AEP-72 (Brussels, Belgium: NATO, September 2014).

**e. ATP-45: Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents (Operators Manual)<sup>45</sup>**

Allied Technical Publication 45 describes the operational aspects of warning, reporting, and predicting CBRN incidents. The document describes “the CBRN procedures to be followed by land, air, and naval forces for the: 1. Reporting of all chemical, biological, or radiological attacks and nuclear detonations and resulting contamination, 2. Predicting and warning of hazard areas due to CBRN incidents, 3. Contributing to the evaluation of CBRN information in order to complete the common operational picture for the commander, 4. Warning of friendly nuclear strikes and the interception of an adversary incoming missile, 5. Transmitting of advanced hazard warning of a potential CBRN agent or Toxic Industrial Materials (TIM) release, and 6. Interchange of reports, quoted in 1 to 5 above, as required.”<sup>46</sup>

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<sup>45</sup> NATO, *ATP-45: Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents (Operators Manual)*, Edition E Version 1, ATP-45 (Brussels, Belgium: NATO, 2014).

<sup>46</sup> NATO, *ATP-45: Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents (Operators Manual)*, Edition E Version 1, ATP-45 (Brussels, Belgium: NATO, 20014), 1-1.

### 3. Terms and Definitions

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The objective of this chapter is to describe the analysis of the CBRN terms and definitions that are in the NATO CBRN medical and operational publications. The IDA team reviewed the medical-related and operational-related CBRN publications listed in Table 1 and collected the terms and definitions from each publication. A comprehensive lexicon of the terms and definitions collected from the NATO CBRN publications is provided in Appendix A.

#### A. NATO Agreed Terms and Definitions

Although the NATO Policy for Standardization states that “NATO documents must contain NATO agreed terminology,” the IDA team found a relatively small percentage of terms and definitions that are NATO Agreed used in the NATO CBRN publications. These NATO Agreed terms were either used by one or multiple publications. Table 3 shows the NATO Agreed terms with the sources (Official NATO terminology databases or glossaries) and the publications that use the NATO Agreed terms and definitions. The listed publications are only those that used the term and provided a definition. There are NATO CBRN publications reviewed for this paper that used the NATO Agreed terms but did not provide a definition. These publications are not captured in Table 3.

**Table 3. NATO Agreed Terms**

<b>Terms</b>	<b>Source(s)</b>	<b>Publication (s)</b>
Absorption	NTMS, NATOTerm, DTP Lexicon	AEP-66
Adsorption	NTMS, NATOTerm, DTP Lexicon	AEP-66
Aeromedical evacuation	NTMS, NATOTerm, AAP-06	AJP-4.10
Aeromedical evacuation, forward	NTMS, NATOTerm	AJP-4.10
Aeromedical evacuation, inter-theatre or strategic	NTMS, NATOTerm	AJP-4.10
Aeromedical evacuation, intra-theatre or tactical	NTMS, NATOTerm	AJP-4.10
Background radiation	NTMS, NATOTerm, AAP-06, AAP-21	AEP-66
Biological agent	NTMS, NATOTerm, AAP-06, AAP-21, AMedP-13	AEP-66

<b>Terms</b>	<b>Source(s)</b>	<b>Publication (s)</b>
Bio-regulator	NTMS, NATOTerm, AAP-21	AEP-66
Casualty (1)	NTMS, NATOTerm, AAP-06, AMedP-13	AJP-4.10, AJMedP-7, AMedP-7.1
Casualty (2)	NTMS, NATOTerm, AMedP-13	AMedP-7.5
Casualty staging unit	NTMS, NATOTerm, AAP-06	AJP-4.10
CBRN Area of Observation	NTMS, AAP-21, DTP Lexicon	AEP-45, ATP-45
CBRN Defence	NTMS, NATOTerm, DTP Lexicon	AJMedP-7, AJP-3.8
CBRN Defence Comprehensive	NTMS, NATOTerm, DTP Lexicon	AJP-3.8
CBRN Device	NTMS, NATOTerm	AJP-3.8
CBRN Environment	NTMS, NATOTerm, DTP Lexicon	AJP-3.8
CBRN Forensics	NTMS, NATOTerm, DTP Lexicon	AMedP-7.6, AJP-3.8
CBRN Incident	NTMS, NATOTerm, DTP Lexicon	AJMedP-7, AJP-3.8
CBRN Substance	NTMS, NATOTerm, DTP Lexicon	AJP-3.8
CBRN Weapon	NTMS, NATOTerm, DTP Lexicon	AJP-3.8
CBRN Zone of Observation	NTMS, NATOTerm, AAP-21, DTP Lexicon	AEP-45, ATP-45
Chemical Casualty	NTMS, NATOTerm	AMedP-7.1, AMedP-7.5
Clearance Decontamination	NTMS, NATOTerm, DTP Lexicon	AJP-3.8
Collective Protection	NTMS	AMedP-7.5
Combined Joint Operation	NTMS, NATOTerm, AAP-06	AJP-4.10
Consequence Management	NTMS, NATOTerm, DTP Lexicon	AJP-3.8
Damage Control Surgery	NTMS, NATOTerm	AJP-4.10
Damage Control Resuscitation	NTMS, NATOTerm	AJP-4.10
Detection	NTMS, NATOTerm, AAP-06, DTP Lexicon	AMedP-7.6
Died of Wounds (DOW)	NTMS, NATOTerm	AMedP-7.5
Doctrine	NTMS, NATOTerm, AAP-06	AJP-4.10
Enhanced First Aid	NTMA, NATOTerm	AJP-4.10
Force Protection	NTMS, NATOTerm, AAP-06	AJP-4.10, AJMedP-7
Hazard Management	NTSM, NATOTerm, AAP-21, DTP Lexicon	AJP-3.8
Health Care or Health Service Support	NTMS, NATOTerm, AAP-06	AJP-4.10

<b>Terms</b>	<b>Source(s)</b>	<b>Publication (s)</b>
Host Nation Support	NTMS, NATOTerm, AAP-06	AJP-4.10
Individual Protective equipment	NTMS, NATOTerm, AAP-06	AMedP-7.5
Information	NTMS, NATOTerm, AAP-06	AJP-4.10
Intelligence	NTMS, NATOTerm, AAP-06	AJP-4.10
Interoperability	NTMS, NATOTerm, AAP-06	AJP-4.10
Isolation	NTMS, NATOTerm	AMedP-7.1, ATP-45
Joint Operations Area (JOA)	NTMS, NATOTerm, AAP-06	AJP-4.10, AJMedP-7
Killed In Action (KIA)	NTMS, NATOTerm	AMedP-7.5
Medical Evacuation	NTMS, NATOTerm, AMedP-13	AJP-4.10, AJMedP-7
Medical Intelligence	NTMS, NATOTerm, AAP-06, AMedP-13	AJP-4.10, AJMedP-7
National Support Element	NTMS	AJP-4.10
Nuclear Casualty	NTMS, NATOTerm	AMedP-7.5
Nuclear Weapon	NTMS, NATOTerm, AAP-06, AAP-21	AMedP-7.1, ATP-45
Operational Control	NTMS, NATOTerm, AAP-06	AJP-4.10
Operational Level	NTMS, NATOTerm, AAP-06	ATP-4.10, AMedP-7.6
Peacekeeping	NTMS, NATOTerm, AAP-06	AJP-4.10
Persistency	NTMS, NATOTerm, DTP Lexicon	AEP-45
Physical Protection	NTMS, NATOTerm, DTP Lexicon	AJP-3.8
Protection Factor	NTMS, NATOTerm, DTP Lexicon	AMedP-7.5
Quarantine	NTMS, NATOTerm	AMedP-7.1
Radionuclide	NTMS, NATOTerm, DTP Lexicon	AEP-66
Radiological Casualty	NTMS, NATOTerm	AMedP-7.1, AMedP-7.5
Restriction of Movement	NTMS, NATOTerm, AMedP-13	AJMedP-7, AMedP-7.1
Return to Duty	NTMS, NATOTerm, AMedP-13	AMedP-7.5
Sampling and Identification of Biological, Chemical, and Radiological Agents	NTMS, NATOTerm, DTP Lexicon	AJP-3.8
Standardisation Agreement	AAP-06	AJP-4.10
Strategic Level	NTMS, NATOTerm, AAP-06	AJP-4.10
Sustainability	NTMS, NATOTerm, AAP-06	AJP-4.10
Tactical Level	NTMS, NATOTerm, AAP-06	AJP-4.10
Teleconsultation	NTMS, NATOTerm, AMedP-13	AJP-4.10
Toxic Industrial Material	NTMS, NATOTerm, AAP-21	AMedP-7.1, AEP-66

<b>Terms</b>	<b>Source(s)</b>	<b>Publication (s)</b>
Toxin	NTMS, NATOTerm, AAP-21, DTP Lexicon	AEP-66
Triage	NTMS, NATOTerm, AAP-06	AJMedP-7
Warning and Reporting	NTMS, NATOTerm, AAP-21	AEP-45, AEP-66

\* The NATO Agreed definitions for the terms listed can be found in Appendix A.

There are two terms that are in the NTMS database but not in the newer NATOTerm database. These terms are “CBRN Area of Observation” and “National Support Element.” The NTMS and NATOTerm databases returned different definitions (see Appendix A) for the term “Collective Protection.” The term “Collective Protection” in NTMS is defined as “protection provided to a group of individuals in a chemical, biological, radiological and nuclear environment, which permits relaxation of individual chemical, biological, radiological and nuclear protection.”<sup>47</sup> In NATOTerm, the same term is defined as “the measures and protective equipment that provide personnel a toxic-free area in a chemical, biological, radiological and nuclear environment.”<sup>48</sup> AMedP-7.5 uses this term with the same definition as NTMS. Since the NATO Agreed definition for Collective Protection (COLPRO) in NATOTerm is more current than the one in NTMS, the IDA team recommends that the NATO CBRN publications use the definition that parallels with NATOTerm. In general, the NATOTerm database offers the most up-to-date terminology and status, and NATO authors should refer to that database instead of the NTMS.

## **B. NATO Agreed Terms Used Differently**

This section describes terms that are NATO Agreed, but the NATO publications define or use the terms differently (see Table 4). Among the publications reviewed for this paper, AMedP-13 and AEP-66 have the largest number of terms with different definitions. A reason for AMedP-13 to have a larger number of differing definitions might be that this NATO glossary dates back to May 2011 and many of the terms have been updated since then. IDA recommends that the following terms should be updated in the next version of AMedP-13: “Chemical Casualty,” “Damage Control Surgery,” “Isolation,” “Nuclear Casualty,” “Quarantine,” “Radiological Casualty,” “Telemedicine,” “Triage,” and “Wounded in Action.”

Several publications used the definitions from AMedP-13 for terms that have a more updated definition in the NATOTerm database. These terms are “Telemedicine” from AJP-4.10, “Wounded in Action” from AMedP-7.5, and “Isolation” and “Quarantine” from AMedP-7.6. While the older definitions from AMedP-13 might be more suitable for the

<sup>47</sup> NTMS, NATO Agreed, 26 Aug 2009.

<sup>48</sup> NATOTerm, NATO Agreed, 12 Dec 2015.

publication, the NTO recommends that all NATO publications use NATO Agreed terminology; therefore, IDA recommends that the CBRN NATO publications modify the definitions to match those that are NATO Agreed.

The NATO Agreed definition for “Population at Risk” found in the terminology database (in the NTMS but not in the NATOTerm database) is actually more dated than the definition provided in AMedP-13. AMedP-7.5 provides a more clear definition for “Population at Risk” stating that individuals are at *risk* of exposure. In this case, IDA recommends updating the NATO Agreed definition to match the more current and clear one and adding to the NATOTerm database.

Although the latest version of AEP-66 was published in April 2015, the publication cites AAP-21 in the glossary of terms. The latest promulgated version of AAP-21 was in 2006 and was later cancelled. In 2009, a draft version of AAP-21 was circulated but never promulgated. Therefore, the definitions cited in AEP-66 are outdated. The outdated terms include “Decontamination,” “Depleted Uranium,” “Desorption,” “Fission Product,” “Hazard Management,” “Individual Protective Equipment,” and “Radiation.” IDA recommends that NATO update the definitions to these terms in the next version of AEP-66 to match the most recent NATO Agreed definitions.

There are terms listed in Table 4 that have more detailed definitions in the NATO publications than the NATO Agreed definitions. AEP-45 provides a more thorough definition for “Correlation,” since the NATO Agreed definition is dated back to 1991 and might not be applicable to the more current publication. “CBRN Incident” is also defined more thoroughly in AEP-45. AJP-4.10 defines “Collective Protection” with more detail compared to the definitions listed in both NTMS and NATOTerm. “Immediate Decontamination” in AMedP-7.1 has a more comprehensive definition than the NATO Agreed one. On the contrary, the NATO Agreed definition for “Incapacitating Agent” is more detailed than the one provided in AMedP-7.1. IDA recommends that the NTP review these terms and their multiple definitions to determine if any modification is necessary.

There are multiple definitions for “Chemical Casualty,” “Hazard Management,” “Physical Protection,” and “Triage.” Although some are more detailed than others, each definition essentially conveys the same meaning. Therefore, IDA recommends that the NATO CBRN publications use the NATO Agreed definitions.

**Table 4. NATO Agreed Terms with Different Definition/Use in NATO Publication**

<b>Terms</b>	<b>NATO Agreed Definition</b>	<b>Publication and Different Use/Definition</b>
Casualty Category	A group of casualties having the same type of injury and causation, as used in medical planning.	AMedP-7.5: A group of casualties with a common prognosis and/or needing approximately the same level of medical treatment.

<b>Terms</b>	<b>NATO Agreed Definition</b>	<b>Publication and Different Use/Definition</b>
CBRN Incident	An occurrence due to the suspected or confirmed presence of chemical, biological, radiological or nuclear substances, either arising from the intention to use them by an aggressor, or following their intentional or accidental release.	AEP-45: Any occurrence, resulting from the use of chemical, biological, radiological and nuclear weapons and devices, the emergence of secondary hazards arising from counter-force targeting, or the release of toxic industrial material into the environment, involving the emergence of chemical, biological, radiological and nuclear hazards or effects.
Chemical Casualty	A casualty caused by exposure to a chemical substance.	AMedP-13: Any person who is lost to his organization by reason of having been declared dead or wounded as a result of exposure to a chemical agent. AMedP-7.6: Result from inhalation, ocular, and/or skin exposure to chemical agents. AEP-45: A person who has been affected sufficiently, by a chemical agent to make him incapable of performing his duties or continuing his mission.
Collective Protection	Protection provided to a group of individuals in a chemical, biological, radiological and nuclear environment, which permits relaxation of individual chemical, biological, radiological and nuclear protection.	AJP-4.10: COLPRO is afforded by facilities or systems equipped with air filtration devices and air locks which provide personnel with a CBRN hazard-free environment for performing critical work and obtaining rest and relief in order to sustain combat operations.
Consequence Management	Actions taken to maintain or restore essential services and to lessen the effects of natural or man-made disasters.	AJP-4.10 & AMedP-7.6: The reactive measures used to mitigate the destructive effects of attacks, incidents, or natural disasters.
Correlation	In intelligence usage, the process which associates and combines data on a single entity or subject from independent observations, in order to improve the reliability or credibility of the information.	AEP-45: Process to determine the relationship between CBRN messages. Correlation can be carried out by calculation and/or comparison of messages to see if they conform to pre-set criteria which depends on whether the messages are CBRN 1, CBRN 2 or CBRN 4.



<b>Terms</b>	<b>NATO Agreed Definition</b>	<b>Publication and Different Use/Definition</b>
Damage Control Surgery	A surgical intervention where the completeness of the immediate surgical repair is sacrificed to achieve haemorrhage and contamination control, in order to avoid a deterioration of the patient's condition.	AMedP-13: Emergency surgical procedures and treatment to stabilize casualties, in order to save life, limb or function, including rapid initial control of haemorrhage and contamination, temporary closure, and resuscitation.
Decontamination	The process by which the hazard from chemical, biological, radiological and nuclear substances is reduced or removed.	AEP-66: The process of making any person, object, or area safe by absorbing, destroying, neutralising, making harmless, or removing chemical or biological agents, or by removing radioactive material clinging to or around it.
Depleted Uranium	Uranium from which most of the fissile isotope uranium-235 has been removed.	AEP-66: Uranium having less than the 0.7% isotopic uranium-235 (U235) that natural uranium has.
Desorption	The release of adsorbed substance.	AEP-66: The process by which a liquid or vapour leaves a surface or material. In the case of chemical agents, sometimes also described as off-gassing.
Fission Product	A complex mixture of substances produced as a result of nuclear fission.	AEP-66: The nuclides produced when fissile nuclides like Uranium-235 and Plutonium-239 split apart (fission). This is the process that produces energy within nuclear reactors and nuclear weapons.
Hazard Management	In chemical, biological, radiological and nuclear defence, all preparatory and responsive measures taken to mitigate chemical, biological, radiological and nuclear hazards through avoidance, control of hazard spread, control and management of exposures, decontamination and waste management.	AMedP-7.6: Refers to those measures taken collectively to limit the operational impact of CBRN incidents. It is based on avoidance, control of spread, and decontamination. AEP-66: A combination of preparatory and responsive measures designed to limit the vulnerability of forces to chemical, biological, radiological, nuclear and toxic industrial hazards and to avoid, contain, control exposure to and where possible neutralise them.
Hot Spot	Region in a contaminated area in which the level of radioactive	AEP-66: A localised region in a contaminated area in which agent

<b>Terms</b>	<b>NATO Agreed Definition</b>	<b>Publication and Different Use/Definition</b>
	contamination is considerably greater than in neighbouring regions in the area.	levels are visually or otherwise detectably elevated in comparison to neighbouring regions in that area.
Identification	The process of attaining an accurate characterization of a detected entity by any act or means so that high confidence real-time decisions, including weapons engagement, can be made.	AEP-66: Determination of the identity of an agent or material employed in a CBRN attack or resulting from release other than attack. This handbook distinguishes increasing levels of certainty in agent identification: provisional, confirmed, and unambiguous.
Immediate Decontamination	Decontamination carried out by individuals upon becoming contaminated. Note: This may include decontamination of some personal clothing and/or equipment.	AMedP-7.1: This is the immediate application of absorbent and/or removal of exposed clothing from an unprotected individual to prevent further absorption and reduce secondary contamination risk. This is considered a first aid measure.
Incapacitating Agent	A chemical agent which produces temporary disabling conditions which (unlike those caused by riot control agents) can be physical or mental and persist for hours or days after exposure to the agent has ceased. Medical treatment, while not usually required, facilitates a more rapid recovery.	AMedP-7.1: These agents cause a reversible mental or physical disability and inability to function. An example of mental incapacitants are BZ and LSD, while examples of physical incapacitants are admasite (DM) (vomiting agent) and Q fever. For some agents, an incapacitating dose (ID50) has been calculated.
Individual Protective Equipment	In chemical, biological, radiological and nuclear defence, the personal equipment intended to physically protect an individual from the effects of chemical, biological, radiological and nuclear substances.	AEP-66: In CBRN defence, the personal clothing and equipment required to protect an individual from chemical, biological and radiological hazards and some nuclear effects. This ordinarily includes but need not be limited to a respirator, whole body covering and simple detection, decontamination and first-aid devices.
Isolation	Separation of ill or contaminated persons or affected baggage, containers, conveyances, goods or postal parcels from others in such a manner as to prevent the spread of infection or contamination.	AMedP-13 & AMedP-7.6: The separation of an infected individual from a healthy population.

<b>Terms</b>	<b>NATO Agreed Definition</b>	<b>Publication and Different Use/Definition</b>
Monitoring	(1) The act of listening, carrying out surveillance on, and/or recording the emissions of one's own or Allied forces for the purpose of maintaining and improving procedural standards and security, or for reference, as applicable.; (2) The act of listening, carrying out surveillance on, and/or recording of enemy emissions for intelligence purposes.; (3) The act of detecting the presence of radiation and the measurement thereof with radiation measuring instruments.	AEP-66: A continuous or periodic process of determining the presence or absence of chemical, biological or radioactive hazards. This may or may not include quantification. Usually distinguished as radiological, chemical, or biological monitoring.
Nuclear Casualty	A casualty caused by exposure to a nuclear flash, blast, heat or radiation.	AMedP-13: Any person who is lost to the organization by reason of having been declared dead, wounded or injured as a result of exposure to nuclear flash, blast, heat or radiation. AMedP-7.6: Are casualties caused by a nuclear detonation.
Operation	A sequence of coordinated actions with a defined purpose. Note: 1. NATO operations are military. 2. NATO operations contribute to a wider approach including non-military actions.	AJP-4.10: A military action or the carrying out of a strategic, tactical, service, training, or administrative military mission; the process of carrying on combat, including movement, supply, attack, defence and manoeuvres needed to gain the objectives of any battle or campaign. [7]
Physical Protection	The measures and equipment intended to provide protection to personnel and materiel in a chemical, biological, radiological or nuclear environment.	AJP-4.10: Is protection provided to an individual in a CBRN environment by protective clothing and/or personal equipment. AMedP-7.5: In chemical, biological, radiological and nuclear defence, a vehicle or shelter that protects an individual from the effects of chemical, biological, radiological and nuclear substances. AMedP-7.6: Consists of individual protective equipment (IPE), collective protection (COLPRO), and equipment and materiel protection.

<b>Terms</b>	<b>NATO Agreed Definition</b>	<b>Publication and Different Use/Definition</b>
Population At Risk	A limited population that may be unique for a specific explosives risk.	AMedP-13: A group of individuals exposed to conditions which may cause injury or illness. AMedP-7.5: A group of individuals considered at risk of exposure to conditions which may cause injury or illnesses.
Quarantine	The restriction of activities and/or separation from others of suspect persons, plants or animals that are not ill or diseased or of suspect baggage, containers, conveyances or goods in such a manner as to prevent the possible spread of infection or contamination.	AMedP-13 & AMedP-7.6: The confinement and active continued health surveillance of an individual who is suspected of having been exposed to an infectious agent, until it is determined that they are free of infection.
Radiation	Radiation consisting of particles, X-rays, or gamma rays with sufficient energy to cause ionization in the medium through which it passes.	AEP-66: Alpha particles, beta particles, gamma-rays, x-rays, neutrons, protons, electrons and other particles capable of producing ions.
Radiological Casualty	A casualty caused by exposure to ionizing radiation.	AMedP-13: Any person who is lost to the organization by reason of having been declared dead, wounded or injured as a result of exposure to nuclear flash, blast, heat or radiation.
Telemedicine	The practice of medicine over a distance using information and communication technologies.	AMedP-13 & AJP-4.10: The use of information and communications technologies to exchange health information and provide healthcare services regardless of time and distance.
Toxic Industrial Biological (TIB)	Preferred term - toxic industrial material.	AEP-66: A sub-category of Toxic industrial materials.
Toxic Industrial Chemical (TIC)	Preferred term - toxic industrial material.	AMedP-7.6: Are toxic chemicals or other substances used for industrial, commercial, medical, or other non-military purposes. AEP-66: A sub-category of Toxic industrial materials.
Toxic Industrial Material (TIM)	A generic term for toxic or radioactive substances in solid, liquid, aerosolized or gaseous form. These may be used, or stored for use, for industrial, commercial, medical, military or domestic purposes. TIM may be chemical, biological or radioactive and	AMedP-7.6: Are toxic chemicals or other substances used for industrial, commercial, medical, or other non-military purposes.

<b>Terms</b>	<b>NATO Agreed Definition</b>	<b>Publication and Different Use/Definition</b>
	described as toxic industrial chemical, toxic industrial biological or toxic industrial radiological.	
Toxic Industrial Radiological (TIR)	Preferred term - toxic industrial material.	AEP-66: A sub-category of Toxic industrial materials
Triage	The evaluation and classification of wounded for purposes of treatment and evacuation. It consists of the immediate sorting of patients according to type and seriousness of injury, and likelihood of survival, and the establishment of priority for treatment and evacuation to assure medical care of the greatest benefit to the largest number.	AMedP-13: The dynamic process of sorting casualties to identify the priority of treatment and evacuation of the wounded, given the limitations of the current situation, the mission, and the available resources. AMedP-7.1: Triage is a continuous and dynamic process used at key chokepoints either for a medical intervention of transport. Triage may be repeated if there is a delay in medical evacuation as casualties may improve or deteriorate.
Wounded In Action (WIA)	A battle casualty who has incurred a non-fatal injury due to an external agent or cause as a result of hostile action.	AMedP-13 & AMedP-7.5: A battle casualty other than "killed in action" who has incurred an injury due to an external agent or cause as a result of hostile action.

### **C. Non-Standardized Terms with Same Definition in Multiple NATO Publications**

This section describes the terms that are not found in any NATO terminology databases, and therefore have not been considered for standardization by the NTP, but are used in multiple NATO CBRN publications with the same definitions. Table 5 lists the terms and definitions and the NATO CBRN publications in which they are present.

Since AEP-45 and ATP-45 are companion publications, they share many of the terms and definitions that are not NATO Agreed. These terms and definitions are generally related to how CBRN incidents are reported and predicted, and are specific to these two publications. However, these two publications are widely used by the NATO members and partner nations including all echelons of command, and therefore, clear and unambiguous communication is required. Therefore, the IDA team recommends that these terminologies should be considered by the NTP for standardization.

Terminologies that are found in official NATO Terminology Glossaries such as AAP-06 and AMedP-13, and are used in NATO CBRN publications but have a non-NATO Agreed status should be submitted to the NTP for standardization. The purpose of an

official NATO glossary is to promote the correct use of terminologies; thus, terminologies found in these glossaries and used in NATO publications should have NATO Agreed status. The terms in this category that were found in the reviewed NATO publications for this paper include “Battle Casualty,” “CBRN Agent,” “Coordinating Authority,” “EpiNATO,” “Mass Casualty Situation,” “Medical Advisor,” “Medical Coordination Cell,” “Medical Director,” “Multinational Forces,” “Patient Tracking,” “Preventive Medicine,” “Primary Health Care,” “Primary Surgery,” “Secondary Health Care,” “Stabilisation,” and “Theatre Holding Policy.”

The term “CBRN Agent” is defined in only two CBRN NATO publications but the term is found in almost all of the NATO CBRN publications reviewed in this paper. For this reason, the IDA team suggests that the term “CBRN Agent,” along with the definition, should be submitted through the standardization process in the NTP to attain NATO Agreed status.

AJP-4.10 and AMedP-7.6 used three terminologies, “During-Incident Phase,” “Post-Incident Phase,” and “Pre-Incident Phase,” that describe three distinct phases of a CBRN incident as it relates to CBRN defence. AMedP-7.6 references AJP-3.8 Ed A for the use of these three terminologies. However, the newer version of AJP-3.8 Ed B, SD3 states that “AJP-3.8 (B) represents a departure from previous NATO CBRN operational publication, where the sequential pre-, during-, and post-incident phases were used, and describes NATO’s CBRN capabilities in the broader context of NATO’s comprehensive approach for both WMD proliferation and CBRN defence alongside principal course of actions NATO could take as outlined in Military Committee (MC) 0511.”<sup>49</sup> AJP-3.8 (B) describes the three pillar approach as “Prevent, Protect, and Recover.”<sup>50</sup> The use of either sets of terms is dependent on the context of the publication.

Other terminologies, such as “immediate therapy,” “post-exposure prophylaxis,” “pre-exposure prophylaxis,” and “pre-treatment,” are used in two NATO CBRN publications, AMedP-7.1 and AMedP-7.6. The latter publication references the former one. The terminologies “Joint Force Commander” and “Medical Regulation” are also used in two separate NATO CBRN publications. These terminologies might not be exclusive to NATO CBRN publications but might be found in conventional medical or operational NATO publications. If they are commonly used in multiple NATO publications, the IDA team recommends that they all go through the process to attain NATO Agreed status.

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<sup>49</sup> NATO, *AJP-3.8: Allied Joint Doctrine for Comprehensive Chemical, Biological, Radiological, and Nuclear Defence, Edition B Version 1*, AJP-3.8 SD 3 (Brussels, Belgium: NATO, 2015), xii.

<sup>50</sup> NATO, *AJP-3.8: Allied Joint Doctrine for Comprehensive Chemical, Biological, Radiological, and Nuclear Defence, Edition B Version 1*, AJP-3.8 SD 3 (Brussels, Belgium: NATO, 2015), xii.

**Table 5. Non-Standardized Terms in Multiple Publications**

<b>Terms</b>	<b>Publication(s)</b>	<b>Definition</b>
Casualty, Battle	AAP-06, AMedP-13, AJP-4.10	Any casualty incurred as the direct result of hostile action, sustained in combat or relating thereto or sustained going to or returning from a combat mission. Related terms: casualty, died of wounds received in action; killed in action; non-battle casualty; wounded in action.
CBRN Agent	AJMedP-7 & AJP-3.8	A generic term used for substances in solid, liquid, aerosolized or gaseous forms that are designed to incapacitate or kill a person.
CBRN Situation Report (SITREP)	AEP-45 & ATP-45	A free text but templated report for providing a summary of CBRN activity relating to possible or actual CBRN incidents, including 'what if' and planning scenarios.
Contamination Area	AEP-45 & ATP-45	The area where a chemical, biological, radiological or nuclear agent or toxic industrial material in solid or liquid form is actually present.
Coordinating Authority	AAP-06 & AJP-4.10	The authority granted to a commander or individual assigned responsibility for coordinating specific functions or activities involving forces of two or more countries or commands, or two or more services or two or more forces of the same service.
Detailed Procedure	AEP-45 & ATP-45	Detailed procedures are those procedures intended to be performed manually or by an automated system using one or more messages.
During-Incident Phase	AJP-4.10 & AMedP-7.6	These activities are the implementation of contingent measures in immediate response to a CBRN incident and focus primarily on preventing exposure of military assets, including personnel, equipment, and materiel.
Enhance Procedure	AEP-45 & ATP-45	Enhanced procedures are those procedures intended to be performed only by an automated system due to complexity and/or time requirements.
EpiNATO	AMedP-13 & AJP-4.10	A NATO-sponsored deployment health surveillance system and is utilised in all NATO operations and exercises and is managed by the medical staff of deployed forces at all levels. It involves the monitoring, collection, and evaluation of illness/injury data on all deployed personnel who report for medical treatment support both, on an outpatient and inpatient basis. It is also set to run in conjunction with other national reporting systems.

<b>Terms</b>	<b>Publication(s)</b>	<b>Definition</b>
Friendly Nuclear Strike Warning (STRIKWARN) Report	AEP-45 & ATP-45	STRIKWARN reports provide information on an imminent nuclear strike from friendly forces and the associated Minimum Safe Distance (MSD).
Hazardous Material Warning (HAZWARN) Report	AEP-45 & ATP-45	HAZWARN reports provide warning of the possibility of a significant CBRN release caused by either friendly or an adversary action.
Immediate Therapy	AMedP-7.1 & AMedP-7.6	Medical countermeasures used to treat the initial effects of a CBRN agent based upon symptoms and signs.
Joint Force Commander	AJP-4.10 & AJMedP-7	A general term applied to a commander (e.g. Commander of Allied Joint Force (COMAJF)) authorised to exercise command authority or operational control over a joint force.
Mass Casualty (MASCAL) Situation	AMedP-13, AJP-4.10, AJMedP-7, AMedP-7.6	An event in which excessive disparity exists between the casualty load and the medical capabilities locally available for its conventional management.
Medical Advisor	AMedP-13, AJP-4.10, AJMedP-7	The senior medical staff officer (physician) in a formation headquarters responsible for ensuring that the commander and his staff are properly aware of the health and medical implications of their actions and any force health issues connected to the operation.
Medical Coordination Cell (MCC)	AMedP-13, AJP-4.10, AMedP-7.6	The executing body of the medical organisation for all CJTF operations, working under the direction of the Medical Director to co-ordinate multinational, joint and multifunctional medical issues, including evacuation.
Medical Director	AMedP-13 & AJP-4.10	The functional head of the medical services in a formation or theatre of operations. Note: The Medical Director may also have the additional responsibilities of being the Medical Advisor to a senior commander.
Medical Regulation	AJP-4.10 & AMedP-7.6	The process of directing, controlling and coordinating the transfer of patients within and outside a JOA. This means from point of wounding or onset of disease and through a continuum of care, in order to facilitate the most effective use of medical treatment and evacuation resources, and to ensure that the patient receives appropriate care in a timely manner.
Missile Intercept Report (MIR)	AEP-45 & ATP-45	MIR provides warning on the intervention of an adversary incoming missile and the associated predicted hazard area.



<b>Terms</b>	<b>Publication(s)</b>	<b>Definition</b>
Multinational Forces	AMedP-13 & AJP-4.10	A force composed of elements of two or more nations.
Patient Tracking	AMedP-13 & AJP-4.10	The precise and continuous monitoring of the location and the intended destination of the patient in the medical treatment and evacuation chain.
Post-Exposure Prophylaxis	AMedP-7.1 & AMedP-7.6	Medical countermeasures administered after detection of an exposure to prevent the effects of a CBRN agent.
Post-Incident Phase	AJP-4.10 & AMedP-7.6	Post-incident activities follow a CBRN incident and are essential to protect assets, restore operational capabilities and regain operating tempo
Pre-exposure prophylaxis	AMedP-7.1 & AMedP-7.6	Medical countermeasures administered before detection of an exposure to prevent the effects of a CBRN agent.
Pre-Incident Phase	AJP-4.10 & AMedP-7.6	During this phase, threat and hazard assessments are generated and appropriate response measures and available equipment are planned, assessed for sufficiency, prepared, tested, and, if necessary for some measures, implemented.
Pre-treatment	AMedP-7.1 & AMedP-7.6	Medical countermeasures administered before exposure to enhance the efficacy of post-exposure therapy.
Preventive Medicine	AMedP-13, AJP-4.10, AJMedP-7	The services that are concerned with identifying, preventing, and controlling acute and chronic communicable and non-communicable diseases, illnesses, and injuries, with food and environmental hygiene, and with vector control.
Primary Health Care	AMedP-13 & AJP-4.10	The provision of integrated, accessible health care services by clinical personnel trained for comprehensive first contact and the continuing care of individuals experiencing signs and symptoms of ill health or having health concerns.
Primary Surgery	AMedP-13 & AJP-4.10	The surgical procedures directed at repair of the local damage caused by wounding, rather than correcting the generalised effects, which is performed normally at Role 3.
Release Area	AEP-45 & ATP-45	The area predicted to be initially affected by a chemical, biological, radiological or nuclear hazard.
Secondary Health Care	AMedP-13 & AJP-4.10	The provision of hospitalisation and specialised clinical care requiring training and equipment levels beyond that which could

Terms	Publication(s)	Definition
Simplified Procedure	AEP-45 & ATP-45	normally be provided at the level of primary care. Simplified procedures are those procedures intended to be manually performed by a CBRN defence staff immediately upon receipt of a message indicating a new CBRN incident.
Stabilisation	AMedP-13 & AJP-4.10	The maintenance of tissue perfusion and oxygenation.
Theatre Holding Policy	AMedP-13, AJP-4.10, AJMedP-7	A command decision for planning purposes indicating the maximum length of time (days) that a patient will be allowed to remain in the theatre for treatment, recovery and return to duty. Explanation: If the prognosis is that recovery will take longer than the timelines set by holding policy, then the patient should be evacuated as soon as he/she is considered suitable for evacuation.
Weather Reports	AEP-45 & ATP-45	Weather reports provide detailed weather information such as temperature, humidity, wind speed, wind direction, precipitation and stability that must be obtained to determine the effects of a CBRN hazard on surrounding environment of the incident.

## D. Non-Standardized Terms with Multiple Definitions

Table 6 describes the terminologies that are not found in either NATO terminology database, and hence have not been requested for standardization by the NTP, but are used in multiple NATO CBRN publications with different definitions. “Biological Casualty” is the only terminology among the four CBRN casualty types that is not NATO Agreed. There are three different definitions used in the NATO CBRN publications. The definition found in AMedP-7.1 and AMedP-7.5, “a casualty caused by exposure to a biological agent or toxin,” correlates to the NATO Agreed CBRN casualty definitions; therefore, this should be the definition recommended for approval by the NTP to attain NATO Agreed status. Once approved, other NATO publications should adopt this definition.

Based on the NTMS database, the term “Dispersion” has been cancelled as of April 2013 but the same definition is still used in the DTP Lexicon. Although AEP-66 provides a more detailed definition compared to the one in the DTP Lexicon, the definition in the DTP Lexicon should be used because it was agreed by the JCBRND-CDG in March 2016 and should be submitted to NTP for standardization.

The status of the term “Medical Countermeasures” is not NATO Agreed based on the NTMS and NATOTerm databases but the same definition is present in three NATO CBRN

publications, AJP-4.10, AJMedP-7 & AMedP-7.5. AMedP-7.1 and AMedP-7.6 provide two additional definitions that are slightly different. The IDA team recommends that this term with the shared definition among the three publications should be submitted to NTP for standardization. Upon approval, all NATO publications that use this term should modify the definition to match the NATO Agreed one.

The terms “First Aid,” “Radiological Dispersal Device,” “Vaccination,” and “Wound” are defined differently in AMedP-13 and AMedP-7.1. Although the definitions in AMedP-7.1 are more detailed than AMedP-13, the IDA team recommends that AMedP-7.1 adopt the definitions in AMedP-13, since it is the official NATO glossary of medical terms and definitions. Similarly, the term “Force Health Protection” has a different definition in AJP-4.10 and AJMedP-7 compared to AMedP-13, and the former two NATO publications should use the definition in AMedP-13.

**Table 6. Non-Standardized Terms with Multiple Definitions**

<b>Terms</b>	<b>NATO Publication and Different Definitions</b>
Biological Casualty	<p>AMedP-13: A person who is lost to his organization by reason of having been declared dead, wounded, or diseased as a result of exposure to a biological agent.</p> <p>AMedP-7.1 &amp; AMedP-7.5: A casualty caused by exposure to a biological agent or toxin.</p> <p>AMedP-7.6: Results from exposure to disease-inducing microorganisms or biological toxins and may be difficult to differentiate from disease and non-battle injury casualties.</p>
Dispersion	<p>DTP Lexicon: In chemical and biological operations, the dissemination of agents in liquid or aerosol form.</p> <p>AEP-66: The dissemination in liquid, vapour, solid or gaseous form of chemical, biological or radioactive agents or materials arising from chemical, biological, radiological and nuclear attacks or release other than attack.</p>
First Aid	<p>AMedP-13: The first measures to assist and relieve individuals suffering from injuries, wounds, diseases, and NBC contamination. Initial treatment is usually provided through self/buddy aid or rendered by medical personnel.</p> <p>AMedP-7.1: First aid is the provision of care to trauma or CBRN casualties to save life or sustain an operation by non-medical or medical personnel. First aid should be delivered as soon as safe to do so and ideally within the first 10 minutes. In a CBRN environment this is likely to be in the most contamination, high-risk or even non-permissive environment (hot zone).</p>
Force Health Protection	<p>AMedP-13: Actions taken to counter the effects of the environment, occupational health risks, and disease through preventive and reactive measures.</p> <p>AJP-4.10 &amp; AJMedP-7: A subset of force protection, force health protection is the sum of all efforts to reduce or eliminate the</p>

Terms	NATO Publication and Different Definitions
Medical Countermeasures	<p>incidence of disease and non-battle injuries to enhance operational health readiness and combat effectiveness.</p> <p>AJP-4.10, AJMedP-7 &amp; AMedP-7.5: Those medical interventions designed to diminish the susceptibility of personnel to the lethal and damaging effects of chemical, biological and radiological hazards and to treat injuries arising from exposure to such hazards.</p> <p>AMedP-7.1: MedCM are pharmaceutical products designed to diminish the susceptibility of personnel to the lethal and damaging effects of chemical, biological and radiological hazards and to treat the effects arising from exposure to such hazards.</p> <p>AMedP-7.6: Are medical interventions, generally pharmaceuticals that mitigate the impact of human exposure to CBRN hazard.</p>
Multinational Force	<p>AAP-06: A force composed of elements of two or more nations.</p> <p>AJP-4.10: Forces of more than one nation under a NATO commander or non-NATO commander within a NATO-led operation.</p>
Radiological Dispersal Device (RDD)	<p>AMedP-13 &amp; AMedP-7.4: An improvised weapon, designed to disperse radionuclides.</p> <p>AMedP-7.1: This is a device that causes an overt or covert deliberate spread of radioactive material for the purpose of causing either irradiation, contamination, psychological effect or combination. Some devices may also be dispersed by an explosive device ('dirty bomb').</p>
Vaccination	<p>AMedP-13: The administration of antigenic material to produce immunity to a disease, in order to prevent or ameliorate the effects of infection by a pathogen. Note: the term 'vaccination' in the military medical environment is used in the broad sense adopted by the World Health Organization so as to cover all procedures known as 'immunisation', 'inoculation', and 'vaccination'.</p> <p>AMedP-7.1: Active immunisation (vaccination) encourages the recipients to develop their own immune response to a biological agent including toxins. Multiple doses may be required before maximal protection over a long period (up to six months). This is usually administered by medical personnel although authorised by the chain of command.</p>
Wound (ROE)	<p>AMedP-13: An injury to tissue including and usually going beyond the cutting, piercing, tearing or breaking of the skin.</p> <p>AMedP-7.1: Any contamination after significant breaking of the skin barrier following a traumatic event.</p>

## E. Non-Standardized Terms Found in One Publication

Table 7 list the terms that are not standardized but are used and defined in only one NATO CBRN publication. Most of these terms are specific to the topic of interest of the particular publication that used them. For example, AMedP-7.1 discusses the management of casualties in a CBRN environment; therefore, many of the terms are medically related, such as “acute onset,” “airborne isolation room,” etc. It should be noted that AMedP-7.1 used the Dorland’s Medical Dictionary to define many of the medical terms used in the

publication. These terms and others that are specific to the publication's main subject and for which the authors cite the definitions from an open-sourced dictionary might not need to have NATO Agreed status. However, these terms could be considered to be added to AMedP-13. The IDA team also recommends that a specific open-sourced medical dictionary should be chosen as the official NATO medical dictionary to be used by all authors of NATO publications.

The IDA team recommends that the terminologies that are not defined by an open-sourced dictionary should be considered for standardization. The reason is that many of the NATO publications that were reviewed in this paper are widely used by the NATO members and partner nations, including all echelons of command, and therefore, clear and unambiguous communication is required. Although the terms listed in Table 7 are found in only a single reviewed NATO publication, the same terms might appear in other NATO documents that were not reviewed in this paper. Thus, the terms listed in Table 7 that are not defined by an open-sourced dictionary should be standardized to avoid any potential ambiguity by the users of the NATO publications.

**Table 7. Non-Standardized Terms with Specific Definitions**

<b>Publication</b>	<b>Term</b>
AJP-4.10	Clinical Governance
	Delayed Treatment
	Expectant Treatment
	Evidence Based Medicine
	First Response Capability
	Immediate Treatment
	Lessons Learned
	Medical Reconnaissance
	Medical Record Keeping
	Medical Supply
	Minimal Treatment
	Patient Management
	Organisations, Governmental
	Role Specialisation
AJMedP-7	NONE
AMedP-7.1	Acute Onset
	Airborne Isolation Room
	Antibacterial
	Antidote
	Antitoxin
	Antivirals

Publication	Term
	Biological Agent (Weaponized)
	Blast Injuries
	Casualty Decontamination Area (CDA)
	Casualty Decontamination Centre (CDC)
	Casualty Decontamination Unit (CELL)
	Casualty Hazard Management
	Chemical Destruction
	Clinical (Casualty) Assessment)
	Clinical Investigations
	Cohort Isolation Ward
	Combined Casualty
	Confirmed (Diagnosis)
	Contagious Casualty
	Containment
	Contaminate Casualty
	Covert (Method of Delivery)
	Cytokine (stimulation) Therapy
	Damaging Agent
	Decontamination Team
	Decorporation
	Definitive Management (Advanced Medical Care)
	Degradation (Psychological Effects)
	Delayed Onset
	Delirium (Psychological Effects)
	Dry Absorbents
	Emergency Medical Treatment (EMT)
	Emerging Disease
	Endemic Disease
	Exposed to Treat
	Exposed Person
	External Contamination
	Eye (Ocular; ROE)
	Flash (Trauma from Nuclear Detonation)
	Full Casualty Decontamination
	Full Decontamination
	Health Surveillance
	Immediate Onset
	Immediate Therapy
	Infectious Disease Assessment Unit (IDAU)

Publication	Term
	Infectious Disease Cohort Treatment Unit
	Ingestion
	Inhalation
	Inoculation (Injection)
	Internal Contamination
	Isolation Room
	Life-Saving Interventions (LSI)
	Limited Decontamination/Removal of Clothing
	Long-Term Sequelae
	Medical Screening
	Mucosa (ROE)
	No Decontamination Required
	Overt (Method of Delivery)
	Passive Immunisation
	Physical Removal
	Post-Exposure Prophylaxis
	Pre-Exposure Prophylaxis
	Pre-Treatment
	Probable (Level of Certainty for Diagnosis)
	Psychological Casualty
	Reactive (Psychological Effects)
	Removal of Clothing (Disrobing)
	Sedation (Psychological Effects)
	Stretcher (Non-Ambulatory) Decontamination
	Supportive Management (Advanced Medical Care)
	Suspected (Level of Certainty for Diagnosis)
	Thermal Injury (Trauma and Nuclear Detonation)
	Transcutaneous
	Walking (Ambulatory) Decontamination
	Wounded Decontamination
AMedP-7.3	Collective Training
AMedP-7.4	Decorporation Therapy
	Dirty Bomb
	Radiation/Radio Nuclear Incident
AMedP-7.5	Aggregate Protection Factor (APF)
	Casualty Criterion
	CBRN Challenge
	Composite Injury Profile
	Convalescent

Publication	Term
AMedP-7.6	Disease Surveillance
	Effective CBRN Challenge
	Icon
	Icon Attributes
	Injury
	Injury Severity Level
	Injury Profile
	Mild (Injury Severity Level)
	Moderate (Injury Severity Level)
	No Observable Injury (NOI)
	Prophylaxis
	Severe (Injury Severity Level)
	Treatment
	Very Severe (Injury Severity Level)
	WIA (1^+)
	WIA (2^+)
	WIA (3^+)
	Information Management
	Medical Support
	Operational Epidemiological
AJP-3.8	Operational ROM
	Post-Incident Phase
AEP-45	Pre-Incident Phase
	Radiological Casualty
	Strategic ROM
	TIC and TIM Casualties
	CBRN Consequence Management
	Activation Products
	Allocated
	Approved
	Atmosphere
	CBRN 1
	CBRN 2
	CBRN 3
	CBRN 4
	CBRN 5
	CBRN 6
	CBRN Centres
	Command, Control and Information System



Publication	Term
AEP-66	Decay Rate (Radiological)
	Downwind Direction
	Downwind Speed
	Elevated Release
	KNO
	Meteorological Data
	NEW
	Overlay
	POS
	Precipitation
	PRO
	Strike Serial Number (SS)
	Unallocated
	Airborne Material
	Airborne Radioactive Material
	Alpha Spectroscopy
	Arthropod
	Background Sample
	Becquerel
	Bioassay
	Blocking Agent
	CBRN Reconnaissance
	CBRN Survey
	Centigray
	Cold Zone
	Confirmatory Identification
	Contents
	Decontamination Zone
	Dewar
	Direct Reading Dosimeter
	Fallout
	Field Blank
	Field Duplicate Sample
	Gamma Spectroscopy
	Groundshine
	Health Physics
	Hot Zone
	Immediate Phase
	Laboratory

Publication	Term
	Late Phase
	Limit of Detection
	Liquid Scintillation Counting
	Low-Level Radiation (LLR)
	Mid-Spectrum Agent (MSA)
	Milliseivert
	Mixed Fission Product
	Operation Exposure Guidance
	Package
	Plume
	Provisional Identification
	Quality Assurance
	Quality Control
	Release other than Attack
	Sample
	Sampling
	Smears
	Spores
	Swipes
	Transuranic Nuclides
	Unambiguous
	Urgent Phase
	Warm Zone
	Zoonosis
AEP-72	Challenge Level
	Vignette
ATP-45	Attack Area
	CBRN Basic Wing Report
	CBRN Chemical (Biological) Downwind Report
	CBRN Effective Downwind Report
	Chemical (Weapon/Device)
	Radiological (Device)

## 4. Abbreviations

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The objective of this chapter is to describe the analysis of the CBRN abbreviations found in the NATO CBRN medical and operational publications. The IDA team reviewed the medical-related and operational-related NATO CBRN publications listed in Table 1 and collected the terms and definitions from each publication. A comprehensive lexicon of the abbreviations is provided in Appendix B.

### A. NATO Agreed Abbreviations

A large number of abbreviations found in the CBRN NATO publications are NATO Agreed; therefore, the IDA team is not going to list all of the NATO Agreed abbreviations in this section. Please refer to Appendix B. This large list of NATO Agreed abbreviations includes a subset of abbreviations that are used to represent two or more full forms. Table 8 summarizes the list of abbreviations with multiple full forms. Using the same abbreviation to represent multiple full forms is generally not a problem because the full forms are usually different enough that readers can determine what the abbreviations stand for based on the context of the paragraph. However, for abbreviations that have similar full forms, it is important that the author clearly states what each abbreviation represents at the first use of it.

The abbreviation “COLPRO” is found in NTMS as “collective chemical, biological, radiological and nuclear protection,”<sup>51</sup> while the same abbreviation is found in NATOTerm as “chemical, biological, radiological and nuclear collective protection.”<sup>52</sup> The five CBRN NATO publications that used this abbreviation state the full form as just “collective protection.”<sup>53</sup> For consistency, IDA recommends that the CBRN NATO publications follow the NATOTerm designation for “COLPRO” because it is the most current NATO Agreed full form.

There are two abbreviations commonly used for restriction of movement, “ROM” or “RM.” The former is the obsolete NATO Agreed abbreviation, while the latter is the current NATO Agreed abbreviation. Three NATO CBRN publications had sections on restriction of movement and two of the publications, AMedP-7.1 and AMedP-7.6, used ROM, whereas AJMedP-7 used RM to designate “restriction of movement.” Although

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<sup>51</sup> NTMS, NATO Agreed, 26 Aug 2009.

<sup>52</sup> NATOTerm, NATO Agreed, 14 Dec 2015.

<sup>53</sup> The five doctrines are AJMedP-7, AMedP-7.1, AMedP-7.5, AMedP-7.6 and AJP-3.8.

ROM is an obsolete abbreviation, it is still used in NATO publications and appears to be the preferred abbreviation. Therefore, IDA recommends that the NTP consider revising the abbreviation back to ROM because that is the more commonly used abbreviation in the NATO publications.

**Table 8. NATO Agreed Abbreviations with Multiple NATO Agreed Full Forms**

<b>Abbreviation</b>	<b>NATO Agreed Full Forms</b>
A	(1) Army; (2) Search Area
AAR	(1) After action report; (2) After action review; (3) Air-to-air refueling
AC	(1) Air coordination; (2) Airspace control; (3) Area commander; (4) Army corps; (5) Aircraft
ACC	(1) Air combat command; (2) Air command; (3) Area control centre; (4) Air control centre; (5) Air coordination centre; (6) Alternate control centre; (7) Approach control centre; (8) Area control; (9) Area coordination centre; (10) Automatic code changing
ACO	(1) Allied Command Operations; (2) Airspace control order; (3) Airspace coordination order
AE	(1) Aeromedical evacuation; (2) Architecture and engineering
AIR	(1) Area of intelligence responsibility; (2) Annual infrastructure report
AMC	(1) ACO Meteorological and Oceanographic Conference; (2) Airborne mission commander; (3) Air mission commander; (4) Air mission control
AP	(1) Allied publication; (2) Accredited personnel; (3) Advisory panel on administration; (4) anti-personnel; (5) Armour-piercing (projectile); (6) Assumed position
APOD	(1) Airport of debarkation; (2) Airport of disembarkation
BC	(1) Battle casualty; (2) Budget; (3) Bar code
BP	(1) Battle position; (2) Border police; (3) Business process
CAD	(1) Canadian dollar; (2) Computer-aided design
CAM	(1) Chemical agent monitor; (2) Computer-aided manufacturing
CAT	(1) Container anchorage terminal; (2) Countering asymmetric threats
CBC	(1) Civil Budget Committee; (2) Cross-border connection
CC	(1) Contact country; (2) Component command; (3) Component commander; (4) Combatant command(er); (5) Compression chamber; (6) Cash credit
CCA	(1) Carrier-controlled approach; (2) Close-combat attack; (3) Contamination control area
CE	(1) Combat engineers; (2) Crisis establishment
CF	(1) Coalition force; (2) Counterforce
CG	(1) Centre of gravity; (2) Contact group
CIC	(1) Combat information centre; (2) Combined intelligence centre; (3) Civilian Intelligence Committee
CIS	(1) Commonwealth of independent states; (2) Communication and information systems

<b>Abbreviation</b>	<b>NATO Agreed Full Forms</b>
CL	(1) Combat load; (2) Confidence level; (3) Confrontation line; (4) Coordination level
CM	(1) Configuration management; (2) Consequence management; (3) Countermeasure; (4) Crisis management; (5) Cruise missile
COC	(1) Certificate of conformance; (2) Change of command; (3) Combat operations centre; (4) Committee of contributors
COLPRO	(1) Collective chemical, biological, radiological and nuclear protection; (2) Chemical, biological, radiological and nuclear collective protection
CPE	(1) Collective protection equipment; (2) Contact point embassy
CRP	(1) Committee of Staff Representatives; (2) Control and reporting post
CS	(1) Close support; (2) Combat support; (3) Committee of Standardization; (4) Counter-surprise
CSF	(1) Central supply facility; (2) Combined strike force
CSU	(1) Computer software unit; (2) Casualty staging unit; (3) CIMIC support unit
CT	(1) Counterterrorism; (2) Consignment tracking
CW	(1) Chemical warfare; (2) Chemical weapon; (3) Continuous wave
CWC	(1) Chemical Weapon Convention; (2) Composite warfare commander
DA	(1) Damage assessment; (2) Direct action
DC	(1) Democratic Centre; (2) Disarmament commission
DF	(1) Defensive fire; (2) Direction finding; (3) Deployable forces; (4) Direct fire
DOB	(1) Deployment operation base; (2) Deployed operating base; (3) Depth of burst; (3) Dispersal operating base
DP	(1) Data processing; (2) Distribution point
DR	(1) Dead reckoning; (2) Dose rate
DS	(1) Democratic Party; (2) Decision sheet; (3) Declared site; (4) Direct support
EE	(1) Effective engagement; (2) Emergency establishment
FM	(1) Force management; (2) Frequency management; (3) Frequency modulation
FMS	(1) Flight management system; (2) Foreign military sales
FP	(1) Force planning; (2) Force proposal; (3) Force protection
FS	(1) Field support; (2) Fire support; (3) Flight safety; (4) Force standards; (5) Functional service
GPS	(1) General-purpose segment; (2) Global positioning system; (3) Global protection system
HA	(1) Holding area; (2) Humanitarian assistance
INS	(1) Improved NATO Air Defence Ground Environment station; (2) Inertial navigation system
IO	(1) International Organization; (2) Interoperability objective
IPC	(1) Industrial Planning Committee; (2) Initial planning conference
IR	(1) Information requirement; (2) Infrared; (3) Intelligence request

<b>Abbreviation</b>	<b>NATO Agreed Full Forms</b>
LIDAR	(1) Laser identification, detection and ranging; (2) Light detection and ranging
LN	(1) Lead Nation; (2) Local national
LOC	(1) Level of operational capability; (2) Limited operational capability; (3) Lines of communication
LSD	(1) Landing ship dock; (2) Logistic support detachment
MC	(1) Military Committee; (2) Mission commander
MD	(1) Mechanized division; (2) Mediterranean Dialogue; (3) military deception; (4) military district; (5) missile defence
MDA	(1) Main defence area; (2) Mine danger area; (3) Multiple docking adapter
MED	(1) Medical; (2) Maritime exercise directive
MEDCC	(1) Medical coordination centre; (2) Medical Coordination Cell
MGRS	(1) Military geographic reference; (2) Military grid reference system
MND	(1) Mission need document; (2) Multinational division
MPS	(1) Maritime per-positioning ship; (2) Mission planning system
MS	(1) Member state; (2) Minesweeper; (3) Military standard
MSA	(1) Minimum safe altitude; (2) Mutual support Agreement
MT	(1) Mobile terminal; (2) Motor transport
MTF	(1) Medical treatment facility; (2) Message text format
Nal	(1) Named area of interest; (2) Naval ammunition interchangeability
NMR	(1) National military representative; (2) NATO military requirement
OE	(1) Operating environment; (2) Operational effectiveness; (3) Operational emergency; (4) Operational environment; (5) Organizational element
OP	(1) Observation post; (2) Operation
PAR	(1) Population at risk; (2) Post-attack reconnaissance; (3) Precision approach radar; (4) Pulse acquisition radar
PC	(1) Political committee; (2) Petroleum Committee; (3) Precious cargo
PCC	(1) Partnership Coordination Cell; (2) Planning coordination conference; (3) Prague Capabilities Commitment
PD	(1) Periscope depth; (2) Point detonating
PIP	(1) (capability) package implementation plan; (2) Project implementation plan
PLT	(1) Partnership liaison team; (2) Planning and liaison team
PM	(1) Precautionary measure; (2) Preventive maintenance; (3) Project manager; (4) Provost marshal
PoE	(1) Port of embarkation; (2) Point of entry/exit
RAM	(1) Rockets, artillery, and mortars; (2) Radar absorbent material; (3) Reliability and maintainability
RAP	(1) Recognized air picture; (2) Reliable acoustic; (3) Readiness action plan
RC	(1) Reception centre; (2) Reduced charge; (3) Regional conflict; (4) Repair coordinator; (5) Required capability

<b>Abbreviation</b>	<b>NATO Agreed Full Forms</b>
RDD	(1) Radiological dispersal; (2) Required delivery date
RES	(1) Radar environment simulation; (2) Radiation exposure state
RFI	(1) Radio-frequency interference; (2) Request for information
RM	(1) Restriction of movement (formerly called ROM); (2) Risk management
RP	(1) Reference point; (2) Rocket projectile; (3) Provisional acceptance; (4) Reporting post; (5) Release point
RS	(1) Requirements statement; (2) Russia; (3) Role specialization
SA	(1) Situational awareness; (2) Security authority; (3) Selective availability; (4) Small arms; (5) Special assignment; (6) Staging area; (7) Surface-to-air
SC	(1) Screen commander; (2) Sea current; (3) Security Council (of the UN); (4) Special corridor; (5) Stockholm Conference; (6) Strategic command; (7) Strategic commander; Sub-committee
SCC	(1) SHAPE Command Centre; (2) Shipping coordination centre; (3) Surveillance coordination centre; (4) System coordinate centre
SMP	(1) Safety management plan; (2) Self-maintenance period
SOF	(1) Special operations forces; (2) Status of forces
SP	(1) Secondary participant; (2) Standardization proposal; (3) Supply point; (4) Start point; (5) Self-propelled; (6) Sensitive point
TE	(1) Task element; (2) Training equipment
TF	(1) Task force; (2) Temporarily-filled; (3) Terrain-following
TIC	(1) Tactical intelligence centre; (2) Toxic industrial chemical
TIR	(1) Target-illuminating radar; (2) Toxic industrial radiological [2, 6, 11, 12, 13, 15]
TO	(1) Technical order; (2) Togo
TOA	(1) Time of arrival; (2) Transfer of authority
TOR	(1) Terms of reference; (2) Time of receipt
WP	(1) Waypoint; (2) White phosphorus; (3) Working paper

While cross-referencing the collected list of CBRN abbreviations in the two terminology databases (NTMS and NATOTerm), the IDA team found that the statuses of multiple abbreviations conflict with one another in the two databases. For example, “AE” for “aeromedical evacuation” is NATO Agreed in the NATOTerm database but has a deleted status in the NTMS database, and “AIR” for “annual infrastructure report” has NATO Agreed status in the NATOTerm database but is not listed in the NTMS at all. All of the inconsistencies between the two terminology databases are noted in Table 9. Since all of the terminologies from the NTMS were migrated to the NATOTerm database at the end of 2015 and the NATOTerm is the most up to date database, the IDA team recommends that the authors of NATO publications should follow the status of all terms shown in the NATOTerm database.

**Table 9. List of Status Inconsistencies in the Two Terminology Databases**

<b>Abbreviation</b>	<b>Full Form</b>	<b>NTMS</b>	<b>NATOTerm</b>
AC	Aircraft	Not listed	NATO Agreed
AE	Aeromedical evacuation	Deleted	NATO Agreed
AIR	Annual infrastructure report	Not listed	NATO Agreed
ALARA	As low as reasonably achievable	Not NATO Agreed	NATO Agreed
CRP	Committee of Staff Representatives	NATO Agreed	Not listed
CT	Consignment tracking	Not listed	NATO Agreed
DF	Direct fire	Not listed	NATO Agreed
DOB	Deployment operation base	Not listed	NATO Agreed
DS	Democratic party	NATO Agreed	Cancelled
FL	Flight level	NATO Agreed	Cancelled
MEDCC	Medical coordination cell	Not listed	NATO Agreed
MS	Military standard	Not listed	NATO Agreed
NP	Nepal	NATO Agreed	Cancelled
NW	Nuclear warfare	NATO Agreed	Cancelled
PC	Petroleum Committee	Not listed	NATO Agreed
PCC	Planning coordination conference	NATO Agreed	Cancelled
RAM	Reliability and maintainability	NATO Agreed	Not listed
RAP	Readiness action plan	Not listed	NATO Agreed
RP	Provisional acceptance	NATO Agreed	Not listed
RS	Russia	NATO Agreed	Cancelled
RS	Role specialization	Deleted	NATO Agreed
SC	Strategic commander	Not listed	NATO Agreed
TIM	Toxic industrial material	Not listed	NATO Agreed
TIR	Toxic industrial radiological	Not listed	NATO Agreed
TO	Togo	NATO Agreed	Cancelled
UAV	Unmanned aerial vehicle	NATO Agreed	Cancelled

## **B. NATO Agreed Abbreviations Used to Represent Non-Standardized Full Forms**

Many of the NATO Agreed abbreviations are used to represent full forms that have not been standardized by the NTP (Table 10). These full forms are usually specific to the subject of the publication and might not require NATO Agreed status. The NATO CBRN publications with the most non-standardized full forms that share the NATO Agreed abbreviations are AMedP-7.1, AEP-45, and ATP-45. AMedP-7.1 describes the medical management of CBRN casualties; thus, it contains terms that are related to the medical



field, such as “advanced medical care,” “blood pressure,” “complete blood count,” etc. The abbreviations for these medical terms are mostly used in AMedP-7.1 among the reviewed publications but these medical terms are likely found in non-CBRN NATO publications that are not reviewed in this paper. Therefore, IDA recommends that the abbreviations for these terms should be standardized by the NTP and that an official NATO medical dictionary be chosen for use by the NATO authors.

AEP-45 and ATP-45 are companion NATO publications that describe the operational aspects of warning, reporting, and predicting CBRN incidents. These publications share many non-standardized full forms that are specific to ways to warn, report, or predict CBRN incidents. Similar to the reasons presented in section 3.E, these non-standardized abbreviations and their full forms are widely used by NATO members and partner nations and should be considered for standardization to avoid any ambiguity.

Many of the non-standardized full forms listed in Table 10 are for specific chemical substances or agents, biological agents, or radioisotopes. There is also a subset for units. These abbreviations will be discussed further in the following sections.

**Table 10. NATO Agreed Abbreviations Representing Not NATO Agreed Full Forms**

<b>Abbreviation</b>	<b>Publication(s)</b>	<b>Not NATO Agreed Full Forms</b>
ABD	ATP-45	Automated biological detector
AC	AMedP-7.1, AMedP-7.5, ATP-45	Hydrogen cyanide
AHP	AMedP-7.3	Allied healthcare professionals
AIR	AEP-45, ATP-45	Aircraft
AMC	AMedP-7.1	Advanced medical care
AP	AEP-66	Activation products
APF	AEP-45	Aggregate protection factor
ASU	AJP-4.10	Aeromedical staging unit
ATI	AMedP-7.1	Air transportable isolator
BA	AMedP-7.1	Biological agent
BAC	ATP-45	Bacterial
BIDS	ATP-45	Biological identification and detection system
BOM	AEP-45, ATP-45	Bomb
BP	AMedP-7.1	Blood pressure
BSA	AMedP-7.1	Body surface area
BW	AMedP-7.6, AEP-66	Biological weapon
CAD	AEP-66	Collisionally activated dissociation
CAS	ATP-45	Chemical abstracts service
CAT	AMedP-7.5	Casualty category
CB	ATP-45	Cloud bottom

<b>Abbreviation</b>	<b>Publication(s)</b>	<b>Not NATO Agreed Full Forms</b>
CBC	AMedP-7.1	Complete (peripheral) blood count
CC	AEP-45, ATP-45	Collection centre
CDL	AMedP-7.1	Clean dirty line
CDR	AEP-45, ATP-45	Chemical downwind report
CE	AEP-66	Capillary electrophoresis
CF	AEP-66, ATP-45	Complement fixation, correlation factor
CG	AMedP-7.1, AMedP-7.5, AEP-45, ATP-45	Phosgene
CIC	AMedP-7.1	CBRN incident cycle
CJOA	AMedP-7.6	Combined joint operations area
CL	AMedP-7.1	Chlorine
CM	AEP-66	Centimetre
CN	AMedP-7.1	Chloroacetophenone
CO	AMedP-7.1	Carbon monoxide
COC	AEP-66	Chain of custody
CPE	AMedP-7.1, AEP-66	Casualty protective equipment, cytopathic effects
CRP	AMedP-7.1	C-Reactive protein
CS	AMedP-7.1	Orthochlorobenzylidene Malononitrile
CSF	AmedP-7.1	Cerebral Spinal Fluid
CSG	AEP-45, ATP-45	Challenge Sub Group
CSH	ATP-45	Centisievert per Hour
CT	AJP-4.10, AMedP-7.1	Computed Tomography
DA	AMedP-7.1, ATP-45	Diphenylchlorarsine, Total downwind distance of the center of the BIO cloud
DC	AMedP-7.1	Diphenylcyanarsine
DE	ATP-45	Extended distance in km
DF	ATP-45	Decays faster than normal
DGM	ATP-45	Degrees/Magnetic North
DL	AEP-45, ATP-45	Leading edge distance, Deployed laboratory
DM	AMedP-7.1	Diphenylaminochlorarsine
DP	AMedP-7.1, AEP-45, ATP-45	Di-phosgene
DPC	AEP-45, ATP-45	Damaged package and contamination
DR	AJP-4.10	Disaster relief
DS	ATP-45	Decay slower than normal
EE	ATP-45	Estimated location
EPR	AMedP-7.1	Electron paramagnetic resonance
EST	ATP-45	Estimated
ETA	ATP-45	Earliest time of arrival
EWS	AEP-45, ATP-45	Effective downwind speed

<b>Abbreviation</b>	<b>Publication(s)</b>	<b>Not NATO Agreed Full Forms</b>
FF	ATP-45	Fresh reactor fuel
FL	ATP-45	Nuclear weapon fallout
FM	AMedP-7.1	Titanium tetroxide
FMS	AEP-45, ATP-45	Fissile material storage
FP	AMedP-7.1, AEP-66	Fission products
FS	AMedP-7.1	Sulphur trioxide-chlorosulphuric acid
GA	AMedP-7.1, AMedP-7.5, AEP-45, ATP-45	Tabun
HF	AMedP-7.1	Hydrofluoric acid
HN	AMedP-7.1, ATP-45	Nitrogen mustard
HP	AEP-66	Health physics
HR	AMedP-7.5, ATP-45	Hour
ID	AMedP-7.1, AEP-66, ATP-45	Infectious dose, Identification, Inside dose rate,
IMS	AEP-66, ATP-45	Ion mobility spectrometry
IND	ATP-45	Indicative
INES	AMedP-7.1	International nuclear event scale
INS	AEP-45, ATP-45	Industrial source
INT	ATP-45	Intelligence based, Intact package or device
IO	ATP-45	Iodine
IP	AEP-45, ATP-45	Intercept point
IPC	AMedP-7.3	Infection prevention and control
IR	AEP-66, ATP-45	Infrared spectrometry, infrared spectroscopy
LSD	AMedP-7.1, ATP-45	D-lysergic acid diethylamide, Least separation distance
LSE	AEP-66	Liquid solid extraction
LTA	ATP-45	Latest time of arrival
MARV	AEP-45, ATP-45	Marburg virus
MDA	AEP-66	Minimum detectable activity
MED	ATP-45	Medium confidence
MF	ATP-45	Multiplication factor
MG	AMedP-7.5	Milligram
MIL	ATP-45	Mils
MIR	AEP-45, ATP-45	Missile intercept report
ML	ATP-45	Millilitre
MLO	ATP-45	Mils/Magnetic North
MLT	ATP-45	Mils/True North
MMS	ATP-45	Mass spectrometer
MMU	AJP-4.10	Multinational medical unit

<b>Abbreviation</b>	<b>Publication(s)</b>	<b>Not NATO Agreed Full Forms</b>
MOR	ATP-45	Mortar
MPS	AEP-45, ATP-45	Metres per second
MS	AEP-66, ATP-45	Mass spectrometry, manned survey
MSA	AEP-66	Mid-spectrum agent
MSD	AEP-45, ATP-45	Minimum safe distance
MSL	AEP-45, ATP-45	Missile
MSV	AEP-66, ATP-45	Millisievert
MT	AEP-45, ATP-45	Megaton
MWS	AEP-45, ATP-45	Military weapon source
NA	AMedP-7.1	Nerve agent
NAC	AMedP-7.1	N-acetylcysteine
NaI	AEP-66	Thallium-activated sodium iodide
NEU	ATP-45	Neutron
NMR	AEP-66, ATP-45	Nuclear magnetic resonance
NOI	AMedP-7.5	No observable injury
NP	AEP-45, ATP-45	Non-persistent
NUC	AEP-45, ATP-45	Nuclear
NW	AMedP-7.1	Nuclear weapon
OC	AMedP-7.1	Oleoresin Capasium
OP	AMedP-7.1	Organophosph-ate(-orous)
OTr	AEP-45, ATP-45	Other substance
PC	ATP-45	Particle counting
PCC	AMedP-7.1	Premature chromosome condensation
PD	ATP-45	Personal dosimeter
PID	ATP-45	Photo ionization detector
PIP	AEP-45, ATP-45	Pipe or pipeline
PIR	AJP-3.8	Priority information requirements
PLT	ATP-45	Plant
PM	ATP-45	Afternoon
PoE	AMedP-7.1	Point of exposure
POW	AMedP-7.1	Point of wounding
PS	ATP-45	Chloropicrin
PU	ATP-45	Plutonium
RAM	AEP-66	Radioactive material
RAP	AEP-72	Risk assessment package
RC	AMedP-7.1, AEP-45	Response category, Regional command
RCP	ATP-45	Radiological contamination probe
RD	ATP-45	Remote detection
R&D	AJP-4.10	Reconstruction and development

Abbreviation	Publication(s)	Not NATO Agreed Full Forms
RES	AEP-66	Radiation exposure status
RHQ	AEP-45	Regional headquarters
RIC	AEP-45, ATP-45	Rickettsiae
RMP	AJP-3.8	Risk management process
RP	AMedP-7.1	Red phosphorous
RS	AEP-66, ATP-45	Raman spectrometry, radius of safety
RSI	AMedP-7.1	Rapid sequence induction
RTS	AMedP-7.1	Revised trauma score
SA	AEP-45, ATP-45	Arsine
SCC	AEP-45, ATP-45	Sub collection centre
SDC	ATP-45	Simple chemical detection kit
SEC	ATP-45	Second
SL	ATP-45	Standard level
SM	ATP-45	Statute mile
SMP	ATP-45	Sub-munitions missile payload
SP	AEP-72	Service pack
SPR	AEP-45, ATP-45, AEP-66	Spray, Surface plasmon resonance
SRF	AEP-45, ATP-45	Spent reactor fuel
SS	AEP-45	Serial strike number
SURF	AEP-45, ATP-45	Surface
TE	AMedP-7.1	Time to emesis
TF	ATP-45	Transmission factor
TG	AEP-45, ATP-45	Tear gas
TO	AMedP-7.3	Training objectives
TOR	AEP-45, ATP-45	Torpedo
TPT	AEP-45, ATP-45	Road transport
TRU	AEP-66	Transuranic element
UAS	ATP-45	Unmanned aerial survey
UGS	AEP-45, ATP-45	Unmanned ground survey
WOO	AMedP-7.1	Window of opportunity
WRC	ATP-45	Warning and reporting centre

### C. Abbreviations for Chemical Substances or Agents, Biological Agents, Radioisotopes, and Medications

The IDA team found that abbreviations for all chemical substances or agents, biological agents, radioisotopes, radiological weapons, and medications are not standardized by the NTP (see Table 11 for the entire list). Many of the chemical substances cited in AMedP-7.1 are related to medical treatment, such as 2-PAM, 4- DMAP, etc. While

these abbreviations are not commonly used in other NATO CBRN publications reviewed in this paper, they might be used in NATO publications not reviewed in this paper and should be considered for NATO standardization.

In addition, many of the chemical agents that are commonly cited in the NATO CBRN publications should have NATO Agreed status. These include nerve agents (GA, GB, GD, GF, and VX), vesicants or blister agents (H, HD, HL, HN, HT, and CX), pulmonary agents (CG, Cl<sub>2</sub>, PS, and DP), blood agents (AC, CK, and H<sub>2</sub>S) and incapacitating agents (BZ, LSD, PCP, DA, DM, DC, CS, CN, OC, and CR). It should be noted that there are several abbreviations used to represent chlorine gas, including CL, Cl<sub>2</sub>, and CL36. IDA recommends using the Cl<sub>2</sub> as the abbreviation, since it is the International Union of Pure and Applied Chemistry (IUPAC)<sup>54</sup> accepted formula for chlorine gas. In some cases, abbreviations are given to a chemical agent class, such as ‘BLOD’ for blood agent, ‘CHOK’ for choking agent, ‘NA’ or ‘NERV’ for nerve agent, etc. These abbreviations are not commonly used in CBRN NATO publications and IDA recommends that they do not need to attain NATO Agreed status.

The IDA team found that only two CBRN NATO publications, AEP-45 and ATP-45, generally provided abbreviations for biological agents. It is commonly accepted by the scientific community that the abbreviations for biological agents are their respective scientific species classification; for example, *Bacillus anthracis* is the etiologic agent of anthrax and the abbreviation for it is *B. anthracis*, *B. mallei* is the abbreviation for *Burkholderia mallei* (glanders), *C. burnetii* is the abbreviation for *Coxiella burnetii* (Q fever), etc. Instead of using the species classifications to abbreviate the biological agents, AEP-45 and ATP-45 used 3- or 4-letter acronyms of the full form. Although the scientific community has an established method to abbreviate biological agents, this method might not be well recognized and broadly used by the NATO members and services. Therefore, IDA recommends that NATO define a method to abbreviate biological agents and the abbreviations should be standardized by the NTP.

A few biological agents have commonly accepted acronyms to represent them. These biological agents typically have relatively long full forms or several different strains. Eastern equine encephalitis virus (EEEV), Ebola virus (EBOV), Severe Acquired Respiratory Syndrome (SARS), Staphylococcal Enterotoxin B (SEB), Venezuelan equine encephalitis virus (VEEV), Western equine encephalitis virus (WEEV), and Viral Haemorrhagic Fever (VHF) should have NATO Agreed status, and therefore should be considered by the NTP for standardization.

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<sup>54</sup> The IUPAC standards and recommendations are internationally binding for scientists in industry and academia, patent lawyers, toxicologists, environmental scientists, legislations, etc. IUPAC “standards” are definitions of terms, standard values, procedures, rules for naming compounds and materials, names and properties of elements in the periodic table, and many more.

Several CBRN publications used radioisotope abbreviations to denote the particular element and the mass number. The standard isotope notation, as stated by the IUPAC, is to use the chemical symbol of the particular element followed by a hyphen and the mass number (i.e., Co-60 represents cobalt with a mass number of 60).<sup>55</sup> Alternatively, the standard notation of an isotope is written by indicating the mass number as a superscript at the upper left of the chemical symbol and the atomic number as a subscript at the lower left of the chemical symbol (i.e.,  $^{252}_{98}\text{Cf}$  represents Californium with a mass number of 252 and an atomic number of 98).<sup>56</sup> It is common to state only the mass number in the superscript and leave out the atomic number subscript because the atomic number is already given by the elemental symbol (i.e.,  $^{252}\text{Cf}$ ).<sup>57</sup> Since there are internationally accepted methods to notate isotopes, the IDA team recommends that all isotopes cited in the NATO CBRN publications should follow the IUPAC standards of notation for isotopes, and NATO should make the IUPAC standards of notation for isotopes a standard within NATO.

**Table 11. Abbreviations for CBRN Agents and Related Technical Terms**

Abbreviation	Publication(s)	Full Form	Submit for Standardization?
2-PAM	AMedP-7.1	Pralidoxime	No
4-DMAP	AMedP-7.1	4-Dimethylaminophenyl hydrochloride	No
5-HT	AMedP-7.1	Serotonin	No
AC	AMedP-7.1, AMedP-7.5, AEP-45	Hydrogen cyanide	Yes
Ach	AMedP-7.1	Acetylcholine	No
AChEase	AMedP-7.1	Acetylcholinesterase	No
AFLT	AEP-45, ATP-45	Aflotoxins	No
AM241	AMedP-7.1, ATP-45	Americium	No
AMBE	ATP-45	Americium/Berillium	No
ANTB	AEP-45, ATP-45	Bacillus anthracis	No
BChEase	AMedP-7.1	Butyrylcholinesterase	No
BL	AEP-45, ATP-45	Blister agent	No
BLOD	AEP-45, ATP-45	Blood agent	No

<sup>55</sup> N.G. Connelly, T. Damhus, R.M. Hartshorn, A.T. Hutton, "Nomenclature of Inorganic Chemistry IUPAC Recommendations 2005," International Union of Pure and Applied Chemistry, The Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge CB4 0WF, UK, 2005.

<sup>56</sup> Ibid.

<sup>57</sup> Ibid.

<b>Abbreviation</b>	<b>Publication(s)</b>	<b>Full Form</b>	<b>Submit for Standardization?</b>
BOTT	AEP-45, ATP-45	Botulinum toxins	No
BRUB	AEP-45, ATP-45	Brucella spp	No
BUMB	AEP-45, ATP-45	Burkholderia mallei	No
BUPB	AEP-45, ATP-45	Burkholderia psuedomallei	No
BZ	AMedP-7.1, AEP-45, ATP-45	3-Quinuclidinyl benzilate	Yes
CBUB	AEP-45, ATP-45	Coxiella burnetii	No
CCHV	AEP-45, ATP-45	Crimean-Congo hemorrhagic fever virus	No
CF252	AMedP-7.1, ATP-45	Californium	No
CG	AMedP-7.1, AMedP-7.5, AEP-45, ATP-45	Phosgene	Yes
CHOK	AEP-45, ATP-45	Choking agent	No
CK	AMedP-7.1, AMedP-7.5, AEP-45, ATP-45	Cyanogen chloride	Yes
CL	AMedP-7.1	Chlorine	No
Cl <sub>2</sub>	AMedP-7.5	Chlorine	Yes
CL36	ATP-45	Chlorine	No
CLA	ATP-45	Chlamydia	No
CLPT	AEP-45, ATP-45	Clostridium Perfringens toxins	No
CM244	ATP-45	Curium	No
CN	AMedP-7.1	Chloracetophenone	Yes
CO	AMedP-7.1	Carbon monoxide	No
Co-60	AMedP-7.1, ATP-45	Cobalt-60	No
CS	AMedP-7.1	Orthochlorobenzylidene Malononitrile (Tear Gas)	Yes
CX	AMedP-7.1	Phosgene oxime	Yes
DA	AMedP-7.1	Diphenylchlorarsine	Yes
DC	AMedP-7.1	Diphenylcyanarsine	Yes
DFOA	AMedP-7.1	Deferoxamine	No
DM	AMedP-7.1	Diphenylaminochlorarsine (Adamsite)	Yes
DMSA	AMedP-7.1	Dimercaptosuccinic Acid (Succimer)	No
DP	AMedP-7.1, AEP-45, ATP-45	Di-Phosgene	Yes
DTPA	AMedP-7.1, AMedP-7.4	Diethylene Triamine Pentaacetic Acid	No
EBOV	AEP-45, ATP-45	Ebola virus	Yes
EDTA	AMedP-7.1, AMedP-7.4	Ethylenediamine-N,N,N',N'-tetraacetic acid	No



<b>Abbreviation</b>	<b>Publication(s)</b>	<b>Full Form</b>	<b>Submit for Standardization?</b>
EEEV	AMedP-7.5, AEP-45, ATP-45	Eastern equine encephalitis virus	Yes
ESCB	AEP-45, ATP-45	Escherichia Coli	No
FLAV	AEP-45, ATP-45	Flaviviruses	No
FM	AMedP-7.1	Titanium Tetraoxide	No
FRTB	AEP-45, ATP-45	Francisella tularensis	No
FS	AMedP-7.1	Sulphur Trioxide-chlorosulphuric Acid	No
G	AEP-45, ATP-45	Nerve G agent	No
GA	AMedP-7.1, AMedP-7.5, AEP-45, ATP-45	Tabun	Yes
GB	AMedP-7.1, AMedP-7.5, AEP-45, ATP-45	Sarin	Yes
GD	AMedP-7.1, AMedP-7.5, AEP-45, ATP-45	Soman	Yes
GF	AMedP-7.1, AMedP-7.5, AEP-45, ATP-45	Cyclosarin	Yes
H	AMedP-7.1, AEP-45, ATP-45	Sulphur Mustard	Yes
H <sub>2</sub> S	AMedP-7.5	Hydrogen sulfide	Yes
HANV	ATP-45	Hantaviruses	No
HD	AMedP-7.5, AEP-45, ATP-45	Distilled mustard	Yes
HF	AMedP-7.1	Hydrofluoric acid	No
HL	AEP-45, ATP-45	Mustard-Lewisite	Yes
HN	AMedP-7.1, ATP-45	Nitrogen mustard	Yes
HT	AEP-45, ATP-45	Trimeric mustard	Yes
I123	AMedP-7.1, ATP-45	Iodine	No
I131	AMedP-7.1, ATP-45	Iodine	No
INCP	AEP-45, ATP-45	Incapacitating agent	No
INFV	AEP-45, ATP-45	Influenza virus	No
IO	ATP-45	Iodine	No
IR192	AmedP-7.1, ATP-45	Iridium	No
JUNV	AEP-45, ATP-45	Junin virus	No
K40	ATP-45	Potassium	No
KI	AMedP-7.1, AEP-66	Potassium Iodine or Potassium Iodate	No
KR85	ATP-45	Krypton	No
LASV	AEP-45, ATP-45	Lassa virus	No
LSD	AMedP-7.1	D-lysergic acid diethylamide	No

<b>Abbreviation</b>	<b>Publication(s)</b>	<b>Full Form</b>	<b>Submit for Standardization?</b>
MACV	AEP-45, ATP-45	Machupo virus	No
MARV	AEP-45, ATP-45	Marburg virus	No
NA	AMedP-7.1	Nerve agent	No
NAC	AMedP-7.1	N-Acetylcysteine	No
NaI	AEP-66	Thallium-activated sodium iodide	No
NERV	AEP-45, AEP-66	Nerve agent	No
OC	AMedP-7.1	Oleoresin Capasicum (Pepper Spray)	Yes
OHFV	AEP-45, ATP-45	Omsk hemorrhagic fever virus	No
OMPA	AEP-72	Octamethyl pyrophosphoramidate	No
OP	AMedP-7.1	Organophosph-ate(-orous)	No
OTSB	AEP-45, ATP-45	Orientia tsutsugamushi	No
P2S	AMedP-7.1	Pralidoxime Mesilate	No
PALT	AEP-45, ATP-45	Palytoxin	No
PCP	AMedP-7.1	Phencyclidine	No
PENT	AEP-45, ATP-45	Penetrating agent	No
PFIB	AMedP-7.1	Perfluoroisobutylene	No
PM147	ATP-45	Promethium	No
PO210	AMedP-7.1, ATP-45	Polonium	No
PS	AMedP-7.1, AEP-45, ATP-45	Chloropicrin	Yes
PU	ATP-45	Plutonium	No
PU238	AMedP-7.1, ATP-45	Plutonium	No
RA226	ATP-45	Radium	No
RBC-AChEase	AMedP-7.1	Red Blood Cell Acetylcholinesterase	No
RCA	AMedP-7.1	Riot Control Agent	No
RIC	AEP-45, ATP-45	Rickettsiae	No
RICB	AEP-45, ATP-45	Rickettsia	No
RICT	AEP-45, ATP-45	Ricins	No
RITB	AEP-45, ATP-45	Rickettsia typhi	No
RP	AMedP-7.1	Red phosphorous	No
RURH	ATP-45	Ruthenium/Rhodium	No
RVFV	AEP-45, ATP-45	Rift Valley fever virus	No
SA	AEP-45, ATP-45	Arsine	No
SALB	AEP-45, ATP-45	Salmonella spp	No
SARS	AMedP-7.1	Severe Acquired Respiratory Syndrome	Yes

<b>Abbreviation</b>	<b>Publication(s)</b>	<b>Full Form</b>	<b>Submit for Standardization?</b>
SATB	AEP-45, ATP-45	Salmonella Typhi	No
SAXT	AEP-45, ATP-45	Saxitoxins	No
SC75	ATP-45	Scandium	No
SDYB	AEP-45, ATP-45	Shigella dysenteriae	No
SEB	AMedP-7.1, AMedP-7.5	Staphylococcal Enterotoxin B	Yes
SR90	AMedP-7.1, ATP-45	Strontium	No
TETT	AEP-45, ATP-45	Tetradotoxin	No
TH232	ATP-45	Thorium	No
TM170	ATP-45	Thulium	No
TNT	AMedP-7.1	Trinitrotoluene	No
TOX	AEP-45, ATP-45	Toxin	No
TRMT	AEP-45, ATP-45	Trichothecene mycotoxins	No
U240	ATP-45	Uranium	No
V	AEP-45, ATP-45	V-agent	No
VARV	AEP-45, ATP-45	Variola virus	No
VEE	AMedP-7.1	Venezuelan Equine Encephalitis	No
VEEV	AMedP-7.5, AEP-45, ATP-45	Venezuelan equine encephalitis virus	Yes
VHF	AMedP-7.1	Viral Haemorrhagic Fever	Yes
VICB	AEP-45, ATP-45	Vibrio cholera	No
VX	AMedP-7.5, AEP-45, ATP-45	O-Ethyl-S-(2-diisopropylaminoethyl) methyl phosphonothiolate	Yes
WEEV	AMedP-7.5, AEP-45, ATP-45	Western equine encephalitis virus	Yes
YB169	ATP-45	Yturbium	No
YELV	AEP-45, ATP-45	Yellow fever virus	No
YPEB	AEP-45, ATP-45	Yersinia pestis	No

## D. Abbreviation for Units

Table 12 lists the units found in the CBRN NATO publications that were reviewed for this paper. All units used in the publications are not NATO Agreed abbreviations and are not listed in any official NATO abbreviation glossaries or databases. Most of the units are International System of Units (SI), which is the modern form of the metric system that is universally agreed for the multitude of measurements that are used today. The SI is

composed of seven SI base units,<sup>58</sup> and from the base units a large set of derived units<sup>59</sup> can be proposed.<sup>60</sup> All countries, except for three (United States, Liberia, and Myanmar), use the metric system. The United States, the only NATO member, uses the customary system. Since SI units are internationally agreed and 99% of the world uses this system, IDA recommends that all units used in NATO publications should be SI units or derived SI units. The SI units and derived SI units might not need to be standardized NATO abbreviations but NATO might need to encourage the use of SI units by the authors of NATO publications and documents. The IDA team also recommends that NATO should publish a list of the commonly used SI units for clarity purposes; this list might consider the difference in SI units for the scientific versus the field user.

From the collection of abbreviations for units shown in Table 12, a number of them should be modified to match those of the SI units. The non-SI units in Table 12 are atm (standard atmosphere), cal (calorie), Ci (curie), F (Fahrenheit), psi (pounds per square inch), and rem (roentgen equivalent man). The SI unit Pa (Pascal) should be used instead of atm or psi as a unit of pressure, while the SI unit J (Joules) should be used for cal as a unit of energy. Ci can be converted to the SI unit Bq (Becquerel) by multiplying 1 unit of Ci by  $3.7 \times 10^{10}$  Bq. C for Celsius or Centigrade is an SI derived unit with special name/symbol and therefore, should be used instead of F for Fahrenheit. The non-SI unit rem can be converted to the SI unit Sv (Sievert, 1 rem = 0.01 Sv).

Other non-SI units that are commonly used include units for length and mass. Length can be represented with non-SI units such as Å (Angstrom), in (inch), ft (feet), or yd (yard) and mass can be represented with non-SI units such as amu (atomic mass unit), lb (pound), or oz (ounce). These non-SI units should be replaced with the SI unit for length, m (meter), and the SI unit for mass, kg (kilogram) in all NATO publications.

Some non-SI units are accepted for use with the international system and these should be used without restrictions in NATO publications. These include units for time, such as min (minute), h (hour), d (day), and a (year); unit for volume such as l or L (liter); and unit for mass such as t (metric ton).<sup>61</sup> There is no standard abbreviation for week or month and therefore, these units should be spelled out in technical writing.

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<sup>58</sup> The seven base units are: length (meter), mass (kilogram), time (second), electric current (ampere), thermodynamic temperature (kelvin), amount of substance (mole), and luminous intensity (candela).

<sup>59</sup> Derived units are units that may be expressed in terms of base units by means of mathematical symbols of multiplication and division.

<sup>60</sup> B.N. Taylor and A. Thompson, "The International System of Units (SI)," National Institute of Standards and Technology Special Publication 330, Washington, 2008.

<sup>61</sup> Ibid, 16.

Two abbreviations, “Bq” and “BQS,” are used for Becquerel, and the accepted SI unit is Bq; therefore, ATP-45 should update BQS to Bq.

**Table 12. Units Used in CBRN NATO publications**

<b>Abbreviation</b>	<b>Publication(s)</b>	<b>Full Form</b>
ACPL	ATP-45	Agent counting particles per litre
atm	AMedP-7.5	Standard atmosphere
Bq	AMedP-7.1, AEP-66	Becquerel
BQM2	ATP-45	Becquerel per square metre
BQM3	ATP-45	Becquerel per cubic metre
BQS	ATP-45	Becquerel
C	ATP-45	Celsius/Centigrade
Cal	AMedP-7.5	Calorie
Cfm	AEP-66	Cubic feet per minute
CFU	AMedP-7.5	Colony forming unit
CFUM2	ATP-45	Colony forming unit per square metre
CFUML	ATP-45	Colony forming unit per millilitre
CGH	ATP-45	Centigray per hour
cGy	AMedP-7.1AMedP-7.4, ATP-45	Centigray
Ci	AMedP-7.1, AMedP-7.5	Curie
CM	AEP-66, ATP-45	Centimetre
CM3	ATP-45	Cubic Centimetre
Cpm	AEP-66	Counts per minute
CSH	ATP-45	Centisievert per Hour
CSV	ATP-45	Centisievert
DAY	AMedP-7.1, AMedP-7.5, ATP-45	Day
Deg	ATP-45	Degrees
DGG	AEP-45, ATP-45	Degrees/Grid North
DGM	ATP-45	Degrees/Magnetic North
DGT	AEP-45, ATP-45	Degrees/True North
F	ATP-45	Fahrenheit
FT	ATP-45	Feet
Gy	AMedP-7.1, AMedP-7.5	Gray
HM	ATP-45	Hectrometre
Hr	AMedP-7.5, ATP-45	Hour
J/cm2	AMedP-7.5	joules per square centimeter
KF	ATP-45	Kilofeet
Kg	AMedP-7.5, ATP-45	Kilogram
KJ	AMedP-7.5	Kilojoule

<b>Abbreviation</b>	<b>Publication(s)</b>	<b>Full Form</b>
KJ/m <sup>2</sup>	AMedP-7.5	Kilojoule per square meter
km	AMedP-7.1, ATP-45	Kilometre
Km/h	ATP-45	Kilometre per hour
kPa	AMedP-7.1, AMedP-7.5	kilopascal
KPH	AMedP-7.1	Knots per hour
KT	AEP-45, ATP-45	Kiloton
KTS	AEP-45, ATP-45	Knots
L	AMedP-7.5, ATP-45	Litre
lb	AMedP-7.5, ATP-45	pounds
L/min	AMedP-7.5	Litre per minute
Lmp	AEP-66	Litres per minute
LTN	ATP-45	Long ton
M	AMedP-7.5, ATP-45	Metre
m <sup>3</sup>	AMedP-7.5, ATP-45	Cubic metre
MBq	AEP-66	Megabecquerel
MeV	ATP-45	Million electro volts
MG	AMedP-7.1, AMedP-7.5	Milligram
Mg/kg	AMedP-7.1	Milligram/kilogram
Mg/m <sup>2</sup>	ATP-45	Milligrams per square metre
Mg/m <sup>3</sup>	AMedP-7.5, ATP-45	Milligrams per cubic metre
Mg-min/m <sup>3</sup>	AMedP-7.1, AMedP-7.5, ATP-45	Milligram-minutes per cubic metre
MGY	ATP-45	Milligray
MIL	ATP-45	Mils
MIN	AMedP-7.5, ATP-45	Minute
MLG	ATP-45	Mils/Grid North
MLO	ATP-45	Mils/Magnetic North
MLT	ATP-45	Mils/True North
MM3	ATP-45	Cubic millimeter
MON	ATP-45	Month
MPH	AMedP-7.1, ATP-45	Miles per Hour
MPK	ATP-45	Milligram/70 kg person
MPS	AEP-45, ATP-45	Metres per second
MSH	ATP-45	Millisievert per Hour
MSV	AEP-66, ATP-45	Millisievert
MT	AEP-45, ATP-45	Megaton
NM	AEP-45, ATP-45	Nautical mile
PFU	AMedP-7.5	PFU
PPB	ATP-45	Parts per billion
PPM	AMedP-7.1, ATP-45	Parts per million

Abbreviation	Publication(s)	Full Form
Psi	AMedP-7.1, AMedP-7.5	Pounds per square inch
rem	AMedP-7.1, AMedP-7.5	Roentgen equivalent man
Sv	AMedP-7.1, AMedP-7.5	Sievert
TBq	AMedP-7.5	Terabecquerel
TON	ATP-45	Ton
UGPK	ATP-45	microgram/70 kg person
USH	ATP-45	Microsievert per hour
USV	ATP-45	Microsievert

## E. Other Abbreviations

There are too many abbreviations that are not officially standardized by the NTP and are used in only a single NATO CBRN publication. Some of these have already been listed in the above sections. Due to the large number of abbreviations in this category, the IDA team is not going to list all the non-standardized abbreviations but ask the reader to refer to Appendix B. The next few paragraphs describe specific abbreviations that deserve some discussion.

Similar to terms and definitions, there is a list of abbreviations that are not NATO Agreed with the same full form used in two or more NATO CBRN publications. The number of abbreviations in this category is quite large, so it won't be fully summarized in a table; refer to the complete abbreviation lexicon in Appendix B. Table 13 shows an abridged list of the non-standardized abbreviations with full forms shared by multiple publications; the list does not include shared abbreviations from AEP-45 and ATP-45. A majority of the non-standardized abbreviations that share the same full form are from AEP-45 and ATP-45, which are the two companion publications that provide guidance on how to warn, report, and predict CBRN incidents. Most of these abbreviations might not require standardization, as they are specific to these two publications.

The shared abbreviations for commonly recognized institutions, organizations, teams, or programs probably do not need to be NATO Agreed but less commonly used abbreviations in this category might require standardization for clarity. The abbreviations in this category include "CDC," "DHSC," "DTRA," "IHR," "HPAC," "MRIIT," "RDOIT," and "WHO." Abbreviations used to convey common scientific terms or methods also might benefit from being standardized by the NTP to provide transparency. These scientific abbreviations include "Ct," "ELISA," "FP," "GC," "IMS," "LC," "PCR," "RIA," and "UV." Additionally, abbreviations that are medical- or agent-related might require NATO standardization for consistency. These are "AEROMEDEVAC," "CPE," "CT," "EIH," "MedCM," "MEDICS," "NBC-AL," "RADIAC," "RBE," and "TIB." Some of these abbreviations will be further discussed below.

**Table 13. Non-Standardized Abbreviations Sharing Same Full Form by Multiple Publications**

<b>Abbreviation</b>	<b>Publications</b>	<b>Full Form</b>	<b>Submit for Standardization?</b>
AEROMEDEVAC	AAP-15, AMedP-7.4	Aeromedical Evacuation	Yes
AJMedP	AJMedP-7, AMedP-7.1, AMedP-7.6	Allied Joint Medical Publication	Yes
C4I	AMedP-7.1, ATP-45	Command, control, communication, computer and intelligence	Yes
CDC	AMedP-7.1, AMedP-7.6	Centre for Disease Prevention and Control	No
CPE	AMedP-7.1, AMedP-7.6	Casualty protective equipment	Yes
Ct	AmedP-7.1, AMedP-7.5	Concentration time	No
CT	AJP-4.10, AMedP-7.1	Computed tomography	Yes
DHSC	AJMedP-7, AMedP-7.6	Deployment Health Surveillance Centre	No
DTRA	AEP-66, AEP-72	USA Defence Threat Reduction Agency	No
EIH	AJP-4.10, AMedP-7.1, ATP-45	Environmental and Industrial Hazards	Yes
ELISA	AMedP-7.1, AEP-66, ATP-66	Enzyme-Linked Immunosorbent Assay	No
FP	AMedP-7.1, AEP-66	Fission products	No
GC	AEP-66, ATP-45	Gas chromatograph	No
HPAC	AMedP-7.5, AEP-66, AEP-72	Hazard Prediction and Assessment Capability	No
IHR	AMedP-7.1, AMedP-7.6	International Health Regulations	No
IMS	AEP-66, ATP-45	Ion mobility spectrometry	No
LC	AEP-66, ATP-45	Liquid chromatograph	No
MedCM	AMedP-7.1, AmedP-7.3, AJP-3.8	Medical countermeasure	Yes
MEDICs	AJMedP-7, AMedP-7.6	Medical Information and Coordination System	Yes
MRIIT	AJMedP-7, AMedP-7.1, AMedP-7.4, AMedP-7.6	Medical Radiological Incident Investigation Team	No
NBC-AL	AMedP-7.6, AEP-66	Deployable NBC analytical laboratory	Yes



<b>Abbreviation</b>	<b>Publications</b>	<b>Full Form</b>	<b>Submit for Standardization?</b>
PCR	AMedP-7.1, AEP-66, ATP-45	Polymerase Chain Reaction	No
RADIAC	AAP-15, AEP-66	Radioactivity detection, indication and computation	Yes
RBE	AMedP-7.1, AMedP-7.5	Relative Biological Effectiveness	Yes
RDOIT	AJMedP-7, AMedP-7.1, AMedP-7.3, AMedP-7.6	Rapidly Deployable Outbreak Investigation Team	No
RIA	AEP-66, ATP-45	Radioimmunoassay	No
TIB	AMedP-7.1, AJP-3.8, AEP-45, AEP-66, ATP-45	Toxic Industrial Biological	Yes
UV	AMedP-7.1, AEP-66	Ultraviolet	No
WHO	AMedP-7.1, AMedP-7.6	World Health Organization	No

Toxic substances are described in a number of ways in the NATO CBRN publications. The abbreviations include TIB (toxic industrial biological), TIC (toxic industrial chemical), TIH (toxic industrial hazard), TIM (toxic industrial material), and TIR (toxic industrial radiological). All of the abbreviations are NATO Agreed except for TIB and all have NATO Agreed definitions except for TIH. Although TIB and TIH are used infrequently in NATO publications, IDA recommends that the NTP consider changing the status of the TIB abbreviation to NATO Agreed status and provide a NATO Agreed definition for TIH, so all toxic substance-related terminologies are NATO Agreed for consistency. The definition stated for TIB, TIC and TIR is, “Preferred term – toxic industrial material” and a full definition is provided for TIM (see Appendix A). Although, most of the toxic substance definitions refer to the definition for TIM, IDA recognizes that NATO publications may need to use TIB, TIC, TIH, or TIR to differentiate among the types of toxic agents and should continue to do so, if necessary. However, because all of the terms related to toxic substances refer to the definition of TIM, IDA recommends that the NATO publications should use TIM to represent general toxic materials.

Another abbreviation that is worth noting is the one for medical countermeasures. “MCM” is the official NATO Agreed abbreviation for medical countermeasures but it is not commonly used in the CBRN NATO publications. “MedCM” is not a standardized abbreviation for medical countermeasures but it is found in several CBRN NATO publications, including AMedP-7.1, AMedP-7.3, and AJP-3.8. Several other CBRN NATO publications, including AMedP-7.5 and AMedP-7.6, use and define the term “medical countermeasures” but do not abbreviate it. Since “MedCM” is the more commonly used

abbreviation, the IDA team recommends replacing the official NATO Agreed abbreviation “MCM” with “MedCM” to represent medical countermeasures.

AMedP-7.1 used the acronym “METHANE” to describe a method to report major incidents. It is noted in AMedP-7.1 that “METHANE” is a standardized incident report used by NATO and some member and other nations. This abbreviation is not found in the NATO terminology databases or AAP-15; however, is defined in AMedP-13.<sup>62</sup> Since it is a standard NATO incident reporting method, the IDA team recommends that the abbreviation “METHANE” and its definition should be considered for NATO Agreed status. The CBRN version of “METHANE” used in AMedP-7.1 is defined slightly differently to reflect the CBRN issue, and therefore might require a separate definition with NATO Agreed status.

Another abbreviation that the NTP might consider standardizing is “DOW,” which represents “died of wounds.” The term and definition for “died of wounds” are NATO Agreed but the abbreviation is not. The other more commonly used abbreviations for casualty category (WIA and KIA) have NATO Agreed status and “DOW” should be considered for standardization.

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<sup>62</sup> METHANE is defined in AMedP-13 as “A NATO-approved and ISAF-adopted standard format to be used as the initial report for incident reporting in an emergency situation. Note: This information includes: 1) Military Details; 2) Exact location of the incident; 3) Time/Type of Incident; 4) Hazards in the area; 5) Approach Routes/Landing sites; 6) Number, nationality, and type of casualties; 7) Expected Response.

## **5. Conclusions and Recommendations**

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The NTO advocates clear and unambiguous communication among its members and partner nations, and promotes the use of standardized terminologies in NATO publications and documents. Although the NTO is responsible for coordinating, supporting, and administering the NTP to standardize the terminologies, it is the responsibility of all NATO members and partner nations to use NATO Agreed terminologies, and identify and submit terminologies for standardization.

The collection of terms and definitions from the 12 NATO CBRN publications reviewed in this paper revealed that a surprisingly small number (<20%) of terms and definitions have NATO Agreed status. Of these NATO Agreed terms, there is a subset of terms that are defined or used differently in the NATO publications. Most are defined differently because the authors of the publication chose to use definitions from older sources that are no longer NATO Agreed. The authors of NATO publications should use the most up to date NATO Agreed terminologies in the publications.

In reviewing the NATO CBRN publications, the IDA team found a large number of non-standardized terms and definitions. A large portion of these terminologies are used and defined in only one of the publications and are specific to the topic of interest of that particular publication, and therefore might not require NATO Agreed status. However, a subset of the same non-NATO Agreed terms and definitions are used in multiple NATO publications and most of these terminologies should be submitted to the NTP for standardization. There is also a small subset of non-standardized terms with multiple non-standardized definitions from different publications. The IDA team recommends that the most commonly cited definition or the definition from an official NATO glossary should be used in the publications and standardized by the NTP.

The IDA team collected close to 1,000 abbreviations from the reviewed NATO CBRN publications. About one-third of the collection of abbreviations have NATO Agreed status. A large subset of these NATO Agreed abbreviations are used to represent multiple full forms and/or non-standardized full forms. Abbreviations for chemical substances or agents, biological agents, and radioisotopes are also commonly cited in the NATO CBRN publications and are not standardized. The IDA team recommends that for some commonly discussed chemical agents and biological agents, their abbreviations should be considered by the NTP for standardization. Since there are internationally accepted rules (IUPAC rules) to notate isotopes, the IDA team recommends that not all isotopes cited in the NATO

CBRN publications need to be NATO Agreed, but the authors of the NATO publications should follow the IUPAC standards of notation for isotopes.

All abbreviations for units are not standardized. Most of the units cited in the reviewed NATO publications are SI units or derivatives of them. Since SI units are internationally agreed, the IDA team recommends that all units in NATO publications should be SI units or derived SI units and do not need to be NATO Agreed. A few publications use non-SI units and these should be converted to an SI unit or a derived SI unit for consistency, except the non-SI units that are accepted for use with the international system.

The IDA team recommends that NATO update AMedP-13 with additional medical terminology that includes CBRN-related terms or consider publishing a new glossary for CBRN medical-related terminologies. Additionally, the NATO CBRN community might also benefit from a CBRN glossary similar to AAP-21, which has been cancelled. The IDA team recommends that the NATO CBRN working groups coordinate and put forward a glossary of CBRN terms/definitions and abbreviations.

Overall, a large percentage of terminologies collected from the NATO CBRN publications are not standardized. While some of these, in the opinion of the team, do not require standardization, many should be standardized for consistency and clarity. NATO members and partner nations should make every effort to use standardized terminology in NATO publications and to identify and submit commonly used terminologies to the NTP for standardization.

For clarity purposes, the following lists the specific recommendations made by the IDA team throughout this paper:

- The authors of NATO publications should use the NATOTerm database exclusively when cross-referencing terminologies because it is the current terminology database.
- When there is a conflict between the information given in the NTMS database and the NATOTerm database, the authors should use the information provided by the NATOTerm database because it supersedes the NTMS database.
- The following outdated NATO Agreed terms should be updated in the next version of AMedP-13: Chemical Casualty, Damage Control Surgery, Isolation, Nuclear Casualty, Quarantine, Radiological Casualty, Telemedicine, Triage, and Wounded in Action.
- The definition for Population at Risk should be updated in the NATOTerm database.
- AEP-66 should update the definitions for the following NATO Agreed terms: Decontamination, Depleted Uranium, Desorption, Fission Product, Hazard Management, Individual Protective Equipment, and Radiation.

- The NTP should review the following NATO Agreed terminologies to determine if modification is necessary: Correlation, CBRN Incident, Collective Protection, Immediate Decontamination, and Incapacitating Agents.
- Non-standardized terminologies (terms/definitions and abbreviations) found in NATO publications that are widely used by the NATO members and partner nations, including all echelons of command, should be considered for standardization to promote clear and unambiguous communication.
- Non-standardized terminologies found in NATO Terminologies Glossaries (AAP-06 or AMedP-13) and used in NATO CBRN publications should be submitted to the NTP for standardization. These terms include Battle Casualty, CBRN Agent, Coordinating Authority, EpiNATO, Mass Casualty Situation, Medical Advisor, Medical Coordination Cell, Medical Director, Multinational Forces, Patient Tracking, Preventive Medicine, Primary Health Care, Primary Surgery, Secondary Health Care, Stabilisation, and Theatre Holding Policy.
- The definition, “A casualty caused by exposure to a biological agent or toxin,” for Biological Casualty should be submitted for standardization.
- The term and definition for Medical Countermeasures, “Those medical interventions designed to diminish the susceptibility of personnel to the lethal and damaging effects of chemical, biological, and radiological hazards and to treat injuries arising from exposure to such hazards,” should be NATO Agreed.
- For non-standardized terminologies, NATO authors should refer to the terms and definitions found in official NATO glossaries (AAP-06 or AMedP-13).
- Non-standardized terms that use definitions from a cited open-sourced dictionary do not need to have NATO Agreed status.
- A specific open-sourced medical dictionary should be chosen as the official NATO medical dictionary to be used by all authors of NATO publications.
- The CBRN NATO publications should follow the NATOTerm designation for COLPRO because it is the most current NATO Agreed full form for COLPRO.
- The NTP should consider revising the abbreviation for Restriction of Movement from RM to ROM because the latter is the more commonly used abbreviation in the NATO publications.

- Commonly used abbreviations for chemical agents should be standardized. These abbreviations are for nerve agents, vesicants or blister agents, pulmonary agents, blood agents, incapacitating agents, and riot agents.
- The abbreviation for chlorine gas should be Cl<sub>2</sub>.
- NATO should define a method to abbreviate biological agents and the abbreviations should be standardized by the NTP.
- Commonly accepted acronyms for several biological agents should be considered for standardization. These include Eastern equine encephalitis virus (EEEV), Ebola virus (EBOV), Severe Acquired Respiratory Syndrome (SARS), Staphylococcal Enterotoxin B (SEB), Venezuelan equine encephalitis virus (VEEV), Western equine encephalitis virus (WEEV), and Viral Haemorrhagic Fever (VHF).
- All isotopes cited in the NATO CBRN publications should follow the IUPAC standards of notation for isotopes, and NATO should make the IUPAC standards of notation for isotopes a standard within NATO.
- All units used in NATO publications should be SI units or derived SI units. NATO should publish a list of commonly used SI units for clarity purposes and encourage NATO authors to use SI units.
- Abbreviations for commonly recognized institutions, organizations, teams, or programs probably do not need to be standardized, but less commonly used abbreviations in this category might require standardization for clarity.
- Abbreviations used to convey common scientific terms or methods might benefit from being standardized by the NTP to provide transparency.
- The NTP should consider changing the status of the TIB abbreviation to NATO Agreed status and provide a NATO Agreed definition for TIH, so all toxic substance-related terminologies are NATO Agreed for consistency.
- The NTP should consider modifying the abbreviation for medical countermeasures from MCM to MedCM since the latter is more commonly used in NATO publications.
- The NTP should consider standardizing the acronym METHANE and its definition because it is a standard NATO incident reporting method.
- The NTP should consider standardizing the abbreviation DOW for died of wounds.
- NATO should update AMedP-13 with additional medical terminology that includes CBRN-related terms or consider publishing a new glossary for CBRN medical-related terminologies.

- The NATO CBRN working groups should coordinate and put forward a glossary of CBRN terms/definitions and abbreviations.
- NATO members and partner nations should make every effort to use standardized terminology in NATO publications and to identify and submit commonly used terminologies to the NTP for standardization.





## **Appendix A. Comprehensive list of Terms and Definitions from NATO Publications Reviewed**

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This appendix is a comprehensive lexicon of the terms and definitions found in the most current NATO CBRN doctrines that were reviewed and analyzed. For those terms and definitions that are NATO Agreed based on the information provided from NTMS and/or NATOTerm, an \* will be noted at the beginning of the entry, along with the date it received NATO Agreed status at the end of the entry. Numbers in brackets [#] at the end of each entry will be provided to indicate the reference(s) that used and defined the specific terminology. Only publication that provided a definition to the terms are noted in the brackets; publications that simply used the term but did not define it are not noted.

### **References**

[1] NATO Terminology Management System (NTMS)

[2] NATOTerm Database

[3] NATO, AAP-06: *NATO Glossary of Terms and Definitions (English and French)*. AAP-06(2015). Brussels, Belgium: NATO, 2015.

[4] NATO, AAP-21: *NATO Glossary of Chemical, Biological, Radiological and Nuclear Terms and Definitions (English and French)*. AAP-21(2006). Brussels, Belgium: NATO, 2006.

[5] NATO, AMedP-13(A): *NATO Glossary of Medical Terms and Definitions*. STANAG 2409. Brussels, Belgium: NATO, 6 May 2011.

[6] CBRN DTP Lexicon

[7] NATO, AJP-4.10(B): *Allied Joint Medical Support Doctrine*. STANAG 2228. Brussels, Belgium: NATO, May 2015)

[8] NATO, AJMedP-7: *Allied Joint Medical Doctrine for Support of Chemical, Biological, Radiological and Nuclear (CBRN) Defence Operations*. STANAG 2596. Brussels, Belgium: NATO, August 2015.

[9] NATO, *Study Draft 4 of AmedP-7.1: Medical Management of CBRN Casualties*. STANAG 2461. Brussels, Belgium: NATO, 2015.

[10] NATO, AmedP-7.3: *Training of Medical Personnel for CBRN Defence*. STANAG 2954. Brussels, Belgium: NATO, March 2015.

- [11] NATO, *AmedP-7.4: Regulations for Establishment and Employment of MRIIT (Medical Radiological Incident Investigation Teams)*. STANAG 2551. Brussels, Belgium: NATO, November 2013.
- [12] NATO, *Study Draft 3 of AmedP-7.5: NATO Planning Guide for the Estimation of CBRN Casualties*. STANAG 2553. Brussels, Belgium: NATO, December 2015.
- [13] NATO, *Study Draft 2 of AmedP-7.6: Commander's Guide to Medical Operations in Support of CBRN Defensive Operations*. STANAG 2873. Brussels, Belgium: NATO, June 2016)
- [14] NATO, *Study Draft 3 of AJP-3.8(B): Allied Joint Doctrine for CBRN Defence*. STANAG 2451. Brussels, Belgium: NATO, 2015.
- [15] NATO, *AEP-45: Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents (Reference Manual)*. STANAG 2497. Brussels, Belgium: NATO, January 8, 2015.
- [16] NATO, *AEP-66: NATO Handbook for Sampling and Identification of Biological, Chemical, and Radiological Agents (SIBCRA)*. STANAG 4701. Brussels, Belgium: NATO, April 15, 2015.
- [17] NATO, *AEP-72: Recommended Chemical, Biological and TIC Challenge Levels*. STANREC 4726. Brussels, Belgium: NATO, September 1, 2014.
- [18] NATO, *ATP-45: Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents (Operator Manual)*. STANAG 2103. Brussels, Belgium: NATO, January 23, 2014.

## **Terms and Definitions**

\*ABSORPTION: The process by which one substance is retained by another. (NATO Agreed, Apr 1 2015) [1, 2, 6, 16]

ACTIVATION PRODUCTS: Are nuclides produced when a stable isotope, such as Cobalt-59, absorbs a neutron creating a radioactive isotope such as Cobalt-60. [15]

ACUTE ONSET: Symptoms and signs that occur usually within six hours after the period of initial exposure. [9]

\*ADSORPTION: The process by which a substance in gaseous, vapour or liquid form accumulates on the surface of another. (NATO Agreed, 1 Apr 2015) [1, 2, 6, 16]

\*AEROMEDICAL EVACUATION: The movement of patients to and between medical treatment facilities by air transportation. (NATO Agreed, 2 Mar 2009) [1, 2, 3, 7]

\*AEROMEDICAL EVACUATION, FORWARD: That phase of evacuation which provides airlift for patients between points within the battlefield, from the battlefield to

the initial point of treatment, and to subsequent points of treatment within the combat zone. [1, 2, 7]

**\*AEROMEDICAL EVACUATION, INTER-THEATRE OR STRATEGIC:** That phase of evacuation which provides airlift for patients from overseas areas or from theatres of active operations, to the home base, to other NATO countries or to a temporary safe area. (NATO Agreed, 9 Jul 1997) [1, 2, 7]

**\*AEROMEDICAL EVACUATION, INTRA-THEATRE OR TACTICAL:** That phase of evacuation which provides airlift for patients from the combat zone to points outside the combat zone, and between points within the communication zone. (NATO Agreed, 9 Jul 1997) [1, 2, 7]

**AEROMEDICAL STAGING UNIT:** A medical unit operating transient patient beds located on or in the vicinity of an emplaning or deplaning airbase or air strip that provides reception, administration, processing, ground transportation, feeding and limited medical care for patients entering or leaving an aeromedical evacuation system. (CANCELLED, 17 Jan 2005) [1, 2, 7]

**AEROSOL:** A suspension of solid or liquid particles in a gaseous medium, usually air. Particle size is usually measured in microns. (Not NATO Agreed, 1 Jul 2006) [1, 4, 16]

**AEROSOLISATION:** The production of a cloud of solid or liquid particles in air or other gaseous medium. (Not NATO Agreed, 1 Jul 2006) [1, 4, 16]

**AGGREGATE PROTECTION FACTOR (APF):** A single protection factor used to represent all relevant protection factors for an icon (based on icon attributes). Computed by multiplying all relevant protection factors. [12]

**AIRBORNE ISOLATION ROOM:** A negative pressure patient-care room used to isolate persons with a suspected or confirmed airborne infectious disease. The room should have an anteroom to act as an airlock for donning and doffing PPE, and its own ablutions. [9]

**AIRBORNE MATERIAL:** Biological, chemical or radioactive material dispersed in the air in the form of dusts, fumes, particulates, mists, vapours or gases. [16]

**AIRBORNE RADIOACTIVE MATERIAL:** Radioactive material dispersed in the air in the form of dusts, fumes, particulates, mists, vapors or gases. [16]

**AIR STABILITY CATEGORY:** An index (e.g., a Pasquill Number) determined by air temperature and wind speed, which describes the mixing of chemical, biological, radiological and nuclear hazards with air. (Not NATO Agreed, 1 Jul 2006) [1, 4, 15]

**ALPHA SPECTROSCOPY:** A radiation detection and analysis technique specifically designed to measure alpha particle energies. [16]

**ALLOCATED:** CBRN1 or CBRN 4 messages which are considered to be from the same incident and linked as a result of correlation with existing CBRN2 messages in the system. [15]

**ANTIBACTERIAL:** Commonly called antibiotics. These provide protection from sensitive bacteria. Their use may be either as self-administered pre- or post-exposure prophylaxis, or by medical personnel for casualty care. [9]

**ANTIDOTE:** These are pharmaceutical agents that counteract a chemical agent. [9]

**ANTITOXIN:** These are antibodies or immunoglobulins raised against specific toxins. Dosage may be based on toxin dose with multiple dosing. [9]

**ANTIVIRALS:** This group of medical countermeasure is less well developed than antibacterials but subject to continuing research and clinical trials. [9]

**APPROVED:** A CBRN2 which has been assessed and considered to be a real incident and has been given an ALFA incident serial number. [15]

**ARTHROPOD:** Segmented animal, with a (usually) hard external skeleton and jointed appendages. Typically, an insect or spider. [16]

**AS LOW AS REASONABLY ACHIEVABLE (ALARA):** A risk management principle that mandates the minimum exposure of personnel to chemical, biological, radiological and nuclear hazards, subject only to the overriding demands of the operational mission. (Not NATO Agreed, 1 Jul 2006) [1, 4, 15, 16]

**ASSAY:** Analysis to determine the presence, absence or quantity of one or more components of a chemical or biological agent or radioactive substance. (Not NATO Agreed, 1 Jul 2006) [1, 4, 16]

**ATMOSPHERE:** Gaseous envelope surround the earth. [15]

**ATTACK AREA:** The identified location of an intentionally created CBRN incident. [18]

**\*BACKGROUND RADIATION:** Nuclear (or ionizing) radiations arising from within the body and from the surrounding to which individuals are always exposed. (NATO Agreed, 1 Feb 1973) [1, 2, 3, 4, 16]

**BACKGROUND READING:** The response by a detector to any phenomena other than those it is being employed to recognize. The term 'Background Count' is often used in respect to radioactivity. (Not NATO Agreed, 1 Jul 2006) [1, 4, 16]

**BACKGROUND SAMPLE:** A sample that 1) can reasonably be assumed to represent the natural background of possibly present biological, chemical, or radiological agent content

at or near a sampling location and 2) that has a sample matrix similar to a normal sample. A background sample serves as a control in laboratory procedures. [16]

**BECQUEREL (Bq):** An SI unit specifying radioactive decay rate: 1 Bq = one radioactive transformation (or decay) per second. [16]

**BIOASSAY:** The determination of type, quantity, concentration, and/or location of chemical, biological or radioactive material in the body using analysis of removed (e.g., blood and saliva) or excreted (e.g., faeces or urine) biological material from the body. [16]

**BIOLOGICAL WEAPON/DEVICE:** An item of materiel which projects, disperses, or disseminates a biological agent including arthropod vectors. (Cancelled, 1 April 2015) [1, 2, 3, 6, 18]

**\*BIOLOGICAL AGENT:** A micro-organism which causes disease in man, plants, or animals or causes the deterioration of materiel. (NATO Agreed, 1 Mar 1973) [1, 2, 3, 4, 5, 16]

**BIOLOGICAL AGENT (WEAPONIZED):** A biological agent that is deliberately used to produce disease or death in humans, animals, or plants, or which produces materiel deterioration. The biological agent may be live (bacteria, virus or fungus) or a toxin. [9] ([8] used several times but never defined)

**BIOLOGICAL CASUALTY:** (1) A person who is lost to his organization by reason of having been declared dead, wounded, or diseased as a result of exposure to a biological agent. [5]; (2) A casualty caused by exposure to a biological agent or toxin. [9, 12]; (3) Results from exposure to disease-inducing microorganisms or biological toxins and may be difficult to differentiate from disease and non-battle injury casualties. [13]

**\*BIO-REGULATOR:** A compound produced by or present in the body of an animal, including man, which controls or mediates some essential bodily functions. (NATO Agreed, 30 Apr 2013) [1, 2, 4, 16]

**BLAST INJURIES:** Caused by the initial positive and negative overpressures, and blast winds. In addition, further injuries will occur due to flying debris and crush injuries due to falling masonry. Treatment will follow conventional guidelines. [9]

**BLOCKING AGENT:** A substance, usually a pharmaceutical, taken into the body that selectively protects or limits a given tissue or organ from absorbing a specific radionuclide or radioactive compound. For example, KI administered under specific conditions can block a large percentage of radioiodine from being taken up in the thyroid. [16]

**\*CASUALTY (1):** With regard to the personnel system, a person who is lost to an organization by reason of having been declared dead, wounded, injured, diseased, detained, captured or missing. (NATO Agreed, 14 May 2013) [1, 2, 3, 5, 7, 8, 9]

\*CASUALTY (2): With regard to the medical system, a person who is lost to an organization by reason of having been declared dead, wounded, injured, or diseased. (NATO Agreed, 14 May 2013) [1, 2, 5, 12]

CASUALTY, BATTLE: Any casualty incurred as the direct result of hostile action, sustained in combat or relating thereto or sustained going to or returning from a combat mission. Related terms: casualty, died of wounds received in action; killed in action; non-battle casualty; wounded in action. [3, 5, 7]

\*CASUALTY CATEGORY: (1) A group of casualties having the same type of injury and causation, as used in medical planning. Example: battle stress/battle shock bases (BSC), captured in action (CIA), died of non-enemy action (DNEA), died of wounds (DOW), died on operations (DOO), diseased (D, DIS), killed in action (KIA), killed by non-enemy action (KNEA), missing in action (MIA), nuclear, biological and chemical (NBC), non battle injured (NBI), wounded by non-enemy action, wounded in action (WIA), wounded on operations (WOO). (NATO Agreed, 7 Nov 2011) [1, 2]; (2) A group of casualties with a common prognosis and/or needing approximately the same level of medical treatment. [12]

CASUALTY CRITERION: The user-specified injury severity level used to determine whether an individual is wounded in action (WIA). [12]

CASUALTY DECONTAMINATION AREA (CDA): This is a generic overarching term that describes a location in the warm zone of varying complexity for the decontamination of any casualties including CBRN and trauma and the provision of EMT. [9]

CASUALTY DECONTAMINATION CENTRE (CDC): This is a standalone casualty decontamination facility with its own logistic support. [9]

CASUALTY DECONTAMINATION UNIT (CELL): This is casualty decontamination facility that operates within a larger unit a MTF and relies on logistic support from the larger unit. A unit may forward deployed in order to enable casualty evacuation using ground and air assets but would have limited capacity. [9]

CASUALTY HAZARD MANAGEMENT: Casualty hazard management is the decision making process for the handling of casualties with a secondary exposure risk due to either contamination or a contagious illness. [9]

\*CASUALTY STAGING UNIT: A medical unit caring for in-transit patients under medical personnel supervision. (NATO Agreed, 22 Jun 2004) [1, 2, 3, 7]

CBRN: A term used in medical planning to include chemical, biological, radiological or nuclear capabilities, attacks, or casualties. [5]

CBRN 1: Report giving basic data about an incident that was observed by the human reporter. [15]

CBRN 2: Report for passing the evaluated data from collected CBRN 1 reports. [15]

CBRN 3: Report for immediate warning of predicted hazard areas. [15]

CBRN 4: Report for reporting detection data and passing monitoring and survey results. This report is used for two cases. Case one; used if an incident is not observed, and the first report is used for two cases. Case one; used if an incident is not observed, and the first indication of contamination is by detection. Case two, used to report measured contamination as a part of a survey or monitoring team. [15]

CBRN 5: Report for passing information on areas of actual contamination. This report can include areas of possible contamination, but only if actual contamination co-ordinates are included in the report. [15]

CBRN 6: Report for passing detailed information on CBRN incidents. [15]

CBRN AGENT: A generic term used for substances in solid, liquid, aerosolized or gaseous forms that are designed to incapacitate or kill a person. [8, 14]

\*CBRN AREA OF OBSERVATION: A geographical area, normally based on the boundaries of a nation state or theatre of operations, within which chemical, biological, radiological and nuclear warning and reporting is conducted under the supervision of a chemical, biological, radiological and nuclear area control centre. Note: A single area of observation may be divided into a number of subordinate zones of observation. (NATO Agreed, 31 Oct 2013) [1, 4, 6, 15, 18]

CBRN BASIC WIND REPORT (CBRN BWR): A CBRN Basic Wind Report is either a CBRN Basic Wind Message (CBRN BWM) or a CBRN Basic Wind Forecast (BWF). These are messages containing basic meteorological data to be used for fallout prediction. [18]

CBRN CENTRES: An organizational entity holding responsibility for CBRN W&R within a hierarchical structure comprising, in descending order, CBRN ACCs, CBRN Zone Control Centres (CBRN ZCCs), CBRN Collection Centres (CBRN CCs), and CBRN SCCs. Ordinarily, CBRN ACCs and CBRN ZCCs are geographically dependent, whereas CBRN CCs and CBRN Sub Collection Centres (CBRN SCCs) are integral to military formations. [15]

CBRN CHALLENGE: 1. The time-varying cumulative amount or degree of CBRN agent or effect estimated to be present in the physical environment with which icons are interacting; 2. For chemical agent with concentration-based effects, also includes the time-varying instantaneous (non-cumulative) concentration estimated to be present in the physical environment with which icons are interacting. [12]

CBRN CHEMICAL (BIOLOGICAL) DOWNWIND REPORT (CBRN CDR): A CBRN Chemical Downwind Report is either a CBRN Chemical Downwind Message (CBRN CDM) or a CBRN Chemical Downwind Forecast (CDF). These are messages containing basic meteorological information for predicting chemical vapour hazard areas, biological aerosol and radioactive particles. [18]

**CBRN CONSEQUENCE MANAGEMENT:** Measures taken to mitigate the damage, loss, hardship and suffering caused by catastrophes, disasters or hostile actions. Note: It also includes measures to restore essential services, protect public health and safety and provide emergency relief to affected populations (as agreed by DTP meeting, Oct 12 – posted for comments at NSA, Nov 12). [14]

**\*CBRN DEFENCE:** The plans, procedures and activities intended to contribute to the prevention of chemical, biological, radiological and nuclear incidents, to protect forces, territories and populations against, and to assist in recovering from, such incidents and their effects. (NATO Agreed, 31 Oct 2013) [1, 2, 6, 8, 14]

**\*CBRN DEFENCE COMPREHENSIVE APPROACH:** The coordinated political, military and civilian actions taken to support chemical, biological, radiological and nuclear defence. (NATO Agreed, 31 Oct 2013) [1, 2, 6, 14]

**\*CBRN DEVICE:** An improvised assembly or system intended to cause the release of chemical, biological, radiological or nuclear substances. (NATO Agreed, 20 Nov 2014) [1, 2, 14]

**CBRN EFFECTIVE DOWNWIND REPORT (CBRN EDR):** A CBRN Effective Downwind Report is either a CBRN Chemical Downwind Message (CBRN EDM) or a CBRN Chemical Downwind Forecast (EDF). These are messages containing information on downwind speed and downwind direction (towards which the wind is blowing) for each of seven pre-selected weapon yields. [18]

**\*CBRN ENVIRONMENT:** An environment where there are chemical, biological, radiological or nuclear threats or hazards. (NATO Agreed, 1 Apr 2015) [1, 2, 6, 14]

**\*CBRN FORENSICS:** The scientific methods and techniques used to analyze materials and data in support of a chemical, biological, radiological, and nuclear incident or threat investigation. [1, 2, 6, 13, 14]

**\*CBRN INCIDENT:** (1) An occurrence due to the suspected or confirmed presence of chemical, biological, radiological or nuclear substances, either arising from the intention to use them by an aggressor, or following their intentional or accidental release. (NATO Agreed, 1 Apr 2015) [1, 2, 6, 8, 14]; (2) Any occurrence, resulting from the use of chemical, biological, radiological and nuclear weapons and devices, the emergence of secondary hazards arising from counter-force targeting, or the release of toxic industrial material into the environment, involving the emergence of chemical, biological, radiological and nuclear hazards or effects. Note: Term may be qualified by words such as ‘suspected’ or ‘confirmed’ as appropriate to the situation. [15]

**CBRN RECONNAISSANCE:** A mission undertaken to obtain information by visual observation or other methods, to confirm or deny the presence of CBRN hazards or attacks. It may include gathering information on enemy use of CBRN weapons or devices or on associated hazards, or meteorological data for CBRN hazard prediction. [16]



**CBRN SITUATION REPORT (SITREP):** A free text but templated report for providing a summary of CBRN activity relating to possible or actual CBRN incidents, including 'what if' and planning scenarios. [15, 18]

**\*CBRN SUBSTANCE:** A chemical or biological agent, a toxic industrial material or a radioactive material, in any physical state or form. (NATO Agreed, 20 Nov 2014) [1, 2, 6, 14]

**CBRN SURVEY:** The directed effort to determine the nature and degree of CBRN hazards in an area of confirmed or suspected contamination and to delineate the boundaries of the hazard area. This may include monitoring the presence of a chemical or biological hazard or the degree of radiation and the sampling of items suspected of contamination. [16]

**\*CBRN WEAPON:** A weapon designed and manufactured to cause the release of a chemical or biological agent, or to generate a nuclear burst. (NATO Agreed, 1 Apr 2015) [1, 2, 6, 14]

**\*CBRN ZONE OF OBSERVATION:** A geographical sub-division of a chemical, biological, radiological and nuclear area of observation. (NATO Agreed, 30 Apr 2013) [1, 2, 4, 6, 15, 18]

**CENTIGRAY:** (1) A unit of absorbed dose of radiation (one centigray equals one rad). (Cancelled, 31 Oct 2013) [1, 2, 6]; (2) An SI unit of absorbed dose of radiation. [16]

**CHALLENGE LEVEL:** Challenge level is defined as the chemical, biological and TIC concentration, dosages, and contamination densities over time that can be expected in the field during realistic attacks, under the assumption that the attacker would make optimum use of the available weapons and weapon carriers and would divide them as well as possible over high/medium and low value targets. [17]

**CHEMICAL AGENT:** (1) A chemical substance which is intended for use in military operations to kill, seriously injure, or incapacitate personnel through its physiological effects. The term excludes riot control agents, herbicides and substances generating smoke and flame. (Cancelled, 14 Dec 2015; was previously NATO Agreed, 1 Dec 1993) [1, 2, 3, 5, 8, 16]

**\*CHEMICAL CASUALTY:** (1) A casualty caused by exposure to a chemical substance. (NATO Agreed, 25 Jun 2014) [1, 2, 9, 12]; (2) Any person who is lost to his organization by reason of having been declared dead or wounded as a result of exposure to a chemical agent. [5]; (3) Result from inhalation, ocular, and/or skin exposure to chemical agents. [13]; (4) A person who has been affected sufficiently, by a chemical agent to make him incapable of performing his duties or continuing his mission. [15]

**CHEMICAL DESTRUCTION:** This method involves the deactivation of an agent by altering its structure. This can be achieved by chemical reactions such as: Hydrolysis, oxidation and active decontamination compounds. [9]

**CHEMICAL (WEAPON/DEVICE):** A chemical weapon/device is an item of materiel that projects, disperses, or disseminates a chemical substance. Depending upon volume and dissemination means, chemical attacks may be expected to encompass lesser areas of ground than nuclear fallout or biological attacks whilst the time-to-effect will lie between the instantaneous impact of a nuclear detonation and the delayed onset of biological agent effects. [18]

**\*CLEARANCE DECONTAMINATION:** Decontamination of materiel to a standard sufficient to allow unrestricted transportation, maintenance, employment or disposal. (NATO Agreed, 20 Nov 2014) [1, 2, 6, 14]

**CLINICAL (CASUALTY) ASSESSMENT:** This element of CBRN Diagnosis is delivered by a clinician such as a doctor, nurse or medic, who has direct access to the casualty. Clinical assessment includes history and examination. [9]

**CLINICAL GOVERNANCE:** A framework in which medical support capabilities, and individual medical staff, are accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish. [7]

**CLINICAL INVESTIGATIONS:** Clinical investigations are the continuing evaluation of a symptomatic casualty after the initial or repeated clinical assessment and include biochemical, haematological, radiographic, microbiological, immunological, chromosomal and toxicological assays. [9]

**COHORT ISOLATION WARD:** An isolation ward for multiple casualties with the same (usually confirmed) infectious disease. For strict isolation, required for highly infectious disease such as VHFs, a one way system for entry (donning) and exit (doffing) is recommended. Bed separation should also be maintained to reduce cross-infection with secondary and opportunistic infections. [9]

**COLD ZONE:** A zone free of contamination. [16]

**\*COLLECTIVE PROTECTION (COLPRO):** (1) Protection provided to a group of individuals in a chemical, biological, radiological and nuclear environment, which permits relaxation of individual chemical, biological, radiological and nuclear protection. (NATO Agreed, 26 Aug 2009) [1, 12]; (2) The measures and protective equipment that provide personnel a toxic-free area in a chemical, biological, radiological and nuclear environment. (NATO Agreed, 12 Dec 2015) [2]; (3) COLPRO is afforded by facilities or systems equipped with air filtration devices and air locks which provide personnel with a CBRN hazard-free environment for performing critical work and obtaining rest and relief in order to sustain combat operations. [7]

**COLLECTIVE TRAINING:** The development of a group capability enhancing individual capabilities and developing cohesion through unit exercise. [10]

**COMBINED CASUALTY:** A chemical, biological or radiological casualty with concurrent traumatic injuries. [9]

**\*COMBINED JOINT OPERATION:** An operation carried out by forces of two or more nations, in which elements of at least two services participate. (NATO Agreed, 31 Aug 2012) [1, 2, 3, 7]

**COMMAND, CONTROL AND INFORMATION SYSTEM:** An integrated system comprised of doctrine, procedures, organisational structure, personnel, equipment, facilities and communications which provides authorities at all levels with timely and adequate data to plan, direct and control their activities. [15]

**COMPOSITE INJURY PROFILE:** Profile: an Injury Profile generated by overlaying multiple Injury Profiles and selecting the maximum Injury Severity Level at each time point. Only used to combine Injury Profiles for distinct injuries caused by a single chemical or radiological agent. [12]

**CONCENTRATION:** The total quantity of a substance in a given unit volume of gas or liquid. In chemical defence, typically expressed as milligrams per cubic metre (mg/m<sup>3</sup>) of air. (Not NATO Agreed, 1 Jul 2006) [1, 4, 16]

**CONFIRMATORY IDENTIFICATION:** Confirmatory identification is the level of identification that measures gross alpha and beta activity of alpha/beta emitters differentiated from background, gives isotopic identification of gamma emitters and provides detection of neutrons. This level is the minimum required for the deployed radiological laboratories and is completed by specialists only. These labs must also be capable of forensic collection and sample preparation for shipment to a fixed laboratory. [16]

**CONFIRMED (PERTAINING TO THE LEVELS OF CERTAINTY FOR DIAGNOSIS):** A clinically compatible case with laboratory confirmation by using clinical, veterinary or environmental samples. The case can be confirmed if laboratory testing was not performed because either a predominant amount of clinical and non-specific laboratory evidence of a particular CBRN agent was present or a 100% certainty of the aetiology of the agent is known. [9]

**\*CONSEQUENCE MANAGEMENT:** (1) Actions taken to maintain or restore essential services and to lessen the effects of natural or man-made disasters. (NATO Agreed, 31 Aug 2012) [1, 2, 6, 14]; (2) The reactive measures used to mitigate the destructive effects of attacks, incidents, or natural disasters. [7, 13]

**CONTAGIOUS CASUALTY:** A biological casualty that has been infected with a transmissible (person to person) microorganism. These casualties will require isolation as part of casualty hazard management. [9]

**CONTAINMENT:** The immediate on scene management of persons that may have been exposed to CBRN agent in order of prevent further spread. It should not however prevent the clearance of persons away from a continuing hazard. [9]

**CONTAMINATED AREA:** The area where a chemical, biological, radiological or nuclear agent or toxic industrial material in solid or liquid form is actually present. [15, 18]

**CONTAMINATE CASUALTY:** A casualty that has been exposed to a persistent CBRN agent, externally, internally or into a wound, that remains a secondary hazard to responders and is symptomatic. These casualties will require casualty decontamination, and may require decorporation (removal of internal contamination) and wound decontamination as part of casualty hazard management. [9]

**CONTAMINATION:** The deposit, absorption or adsorption of chemical or biological agents or radioactive material on or by structures, areas, personnel or objects. (Not NATO Agreed, 1 Jul 2006; Was previously NATO Agreed on 1 Nov 1994) [1, 3, 4, 16] (NATO Agreed, 1 Jul 2006) [2]

**CONTENTS:** The items contained in the sample package and may include not only samples collected at an event but documentation of the samples and field collection efforts. [16]

**CONVALESCENT (CONV):** A patient who is “mostly ambulatory [and] requires limited therapeutic intervention and administration of oral medications performed by the patient. [12]

**COORDINATING AUTHORITY:** The authority granted to a commander or individual assigned responsibility for coordinating specific functions or activities involving forces of two or more countries or commands, or two or more services or two or more forces of the same service. He has the authority to require consultation between the agencies involved or their representatives, but does not have the authority to compel agreement. In case of disagreement between the agencies involved, he should attempt to obtain essential agreement by discussion. In the event he is unable to obtain essential agreement he shall refer the matter to the appropriate authority. [3, 7]

**\*CORRELATION:** (1) In intelligence usage, the process which associates and combines data on a single entity or subject from independent observations, in order to improve the reliability or credibility of the information. (NATO Agreed, 15 Nov 1991) [1, 2, 3]; (2) Process to determine the relationship between CBRN messages. Correlation can be carried out by calculation and/or comparison of messages to see if they conform to pre-set criteria which depends on whether the messages are CBRN 1, CBRN 2 or CBRN 4. [15]

**COVERT (METHOD OF DELIVERY):** Covert methods, including the use of insect vectors, mean that casualty presentation have no obvious causation and investigations will require an effective form process using epidemiological methods as described in Chapter 17. Cover methods may become detected if a real-time detection network is in place with a warning time short enough to 'detect to protect' where protect may be physical or post-exposure medical countermeasure. [9]

**CYTOKINE (STIMULATION) THERAPY:** This treatment uses cytokines to stimulate the casualties own immune system in order to fight the infection. Some of these treatments are also used in the management of acute radiation syndrome. [9]

**\*DAMAGE CONTROL SURGERY:** (1) A surgical intervention where the completeness of the immediate surgical repair is sacrificed to achieve haemorrhage and contamination control, in order to avoid a deterioration of the patient's condition. (NATO Agreed, 9 Jul 2012) [1, 2, 7]; (2) Emergency surgical procedures and treatment to stabilize casualties, in order to save life, limb or function, including rapid initial control of haemorrhage and contamination, temporary closure, and resuscitation. [5]

**\*DAMAGE CONTROL RESUSCITATION:** A systematic approach to dealing with major trauma combining the catastrophic bleeding, airway, breathing and circulation paradigm with a series of clinical techniques from immediate life-saving measures up to surgical interventions in order to minimise blood loss, maximise tissue oxygenation and optimise outcome. Note: Measures are commenced by emergency medical personnel within 1 hour of wounding. (NATO Agreed, 9 Jul 2012) [1, 2, 7]

**DAMAGING AGENT:** These agents have a low mortality in those exposed during conflict of < 5% but will have a significant impact on medical support. Examples include sulphur mustard and low dose radiation. [9]

**DECAY RATE (RADIOLOGICAL):** The rate of disintegration of radioactive material with the passage to time. [15]

**\*DECONTAMINATION:** (1) The process by which the hazard from chemical, biological, radiological and nuclear substances is reduced or removed. (NATO Agreed, 1 Apr 2015) [1, 2, 6]; (2) The process of making any person, object, or area safe by absorbing, destroying, neutralising, making harmless, or removing chemical or biological agents, or by removing radioactive material clinging to or around it. [16]

**DECONTAMINATION TEAM:** This is a team trained in personnel and casualty decontamination that may be medical or non-medical. Some CBRN and trauma first-aid training should be provided, and be interoperable with the EMT team for stretcher (non-ambulatory) casualty decontamination. [9]

**DECONTAMINATION ZONE:** Or warm zone. The area between actual contamination and no contamination where decontamination operations are located. [16]

**DECORPORATION:** The removal of internal contamination. [9]

**DECORPORATION THERAPY:** Used to eliminate or reduce a confirmed internal contamination in a contaminated individual. [11]

**DEFINITIVE MANAGEMENT (ADVANCED MEDICAL CARE):** Definitive treatment is the final level of comprehensive care provided to return the patient to the highest

degree of mental and physical capability possible. After the definitive treatment period the individual may undergo rehabilitation before being returned to duty or discharged from military service. For some casualties, definitive care may only be available at Role 4 or in an allied nation. Types of definitive treatment include further antidote treatment, replacement therapy, as well as surgery and burns management. [9]

**DEGRADATION (PSYCHOLOGICAL EFFECTS):** These are the psychological effects of wearing IPE and may be caused by claustrophobia, poor communications and isolation, or a delirium secondary to heat illness (heat stroke). [9]

**DELAYED ONSET:** Symptoms and signs that occur usually after six hours. For these cases, the initial event may not be associated with delayed effects seen. Agents with delayed onset may require special arrangements to be in place to observe and respond to the delayed effects. [9]

**DELAYED TREATMENT:** To consist of those in need of surgery, but whose general condition permits delay in surgical treatment without unduly endangering life. To mitigate the effects of delay in surgery, sustaining treatment (for example: stabilising intra-venous fluids, splinting, administration of antibiotics, catheterisation, gastric decompression and relief of pain), will be required. Examples: include after large muscle wounds, fractures of major bones, intra-abdominal and/or thoracic, head or spinal injuries, uncomplicated major burns. [7]

**DELIRIUM (PSYCHOLOGICAL EFFECTS):** This is an acute, transient disturbance of consciousness with reduced ability to pay attention to external stimuli, and disorganised thinking with rambling or incoherent speech caused directly by the agent. Some agents may cause hallucinations and are described as psychoactive or psychotropic. [9]

**\*DEPLETED URANIUM:** (1) Uranium from which most of the fissile isotope uranium-235 has been removed. (NATO Agreed, 10 Apr 2014) [1, 2, 6]; (2) Uranium having less than the 0.7% isotopic uranium-235 (U235) that natural uranium has. [16]

**\*DESORPTION:** (1) The release of adsorbed substance. (NATO Agreed, 31 Oct 2013) [1, 6]; (2) The process by which a liquid or vapour leaves a surface or material. In the case of chemical agents, sometimes also described as off-gassing. [16]

**DETAILED PROCEDURE:** Detailed procedures are those procedures intended to be performed manually or by an automated system using one or more messages. [15, 18]

**\*DETECTION:** (1) The discovery by any means of the presence of a person, object or phenomenon of potential military significance (NATO Agreed, 1 Dec 1976) [1, 2, 3]; (2) In chemical, biological, radiological and nuclear defence, the discovery, by any means, of the presence of a chemical, biological, radiological and nuclear substance. (NATO Agreed, 10 Apr 2014) [1, 2, 6, 13]

**DETECTOR:** A device or system, including the observation of living organisms, employed to recognize the emergence, presence or absence of chemical, biological,

radiological and nuclear warfare events or hazards. (Not NATO Agreed, 1 Jul 2006) [1, 4, 16]

**DEWAR:** A container designed to store liquid nitrogen at the very low temperature of about 77 degrees Kelvin. For example, liquid nitrogen is used to cool semiconductor detector crystals (e.g., HPGe) in some radioactivity detectors; that cooling greatly enhances the detector's energy resolution performance. [16]

**\*DIED OF WOUNDS (DOW) Received in Action:** A battle casualty who died after having entered the medical care system. (NATO Agreed, 7 Nov 2011) [1, 2, 12]

**DIRECT READING DOSIMETER:** A self-reading personal RADIAC instrument for measuring and registering total accumulated exposure to radiation. The instrument may also provide other functions such as displaying the real-time dose rate. The instrument is not to be confused with a national individual passive permanent dosimeter such as a film badge. [16]

**DIRTY BOMB:** Special RDD type, which uses conventional explosives to accomplish the task of dispersing radionuclides. [11]

**DISEASE SURVEILLANCE:** Disease surveillance is the observation of patterns of disease in plants, animals and humans. [12]

**DISPERSION:** (1) In chemical and biological operations, the dissemination of agents in liquid or aerosol form. (Cancelled, 30 Apr 2013) [1, 2, 6]; (2) The dissemination in liquid, vapour, solid or gaseous form of chemical, biological or radioactive agents or materials arising from chemical, biological, radiological and nuclear attacks or release other than attack. [16]

**\*DOCTRINE:** Fundamental principles by which the military forces guide their actions in support of objectives. It is authoritative but requires judgement in application. (NATO Agreed, 1 Mar 1973) [1, 2, 3, 7]

**DOWNWIND DIRECTION:** The mean surface downwind direction in the hazard area during the forecast period towards which the cloud travels. (FM 3-10) Related terms: downwind speed. [15]

**DOWNWIND SPEED:** The mean surface downwind speed in the hazard area during the forecast period. Related terms: downwind direction. [15]

**DRY ABSORBENTS:** Adsorbents physically draw in liquid contaminants and examples of adsorbents include fuller's earth and powdered resins. It should be noted that the agent is not destroyed and an off-gassing hazard from the adsorbent material and residual contamination remains after dry decontamination. [9]

**DURING-INCIDENT PHASE:** These activities are the implementation of contingent measures in immediate response to a CBRN incident and focus primarily on preventing exposure of military assets, including personnel, equipment, and materiel. [7, 13]

**EFFECTIVE CBRN CHALLENGE:** The cumulative (or in the case of a chemical agent peak concentration challenge, maximum instantaneous) amount or degree of CBRN agent or effect that is estimated to actually affect an icon, after accounting for the icon's attributes. [12]

**ELEVATED RELEASE:** Any release which, due to fire, momentum, or explosion, is carried above 50 m from the ground is considered an elevated release. [15]

**EMERGENCY MEDICAL TREATMENT (EMT):** The provision of forward life-saving treatment to CBRN casualties including trauma EMT, before and during any decontamination. [9]

**EMERGING DISEASE:** An emerging disease is one that has appeared in a population for the first time, or that may have existed previously but is rapidly increasing in incidence or geographic range [WHO]. This remains a challenge to any medical organisation as the characteristics of the agent will be unquantified until a case series has been established. Laboratory diagnosis will also be difficult particularly where there is a reliance on molecular biology. [9]

**ENDEMIC DISEASE:** Endemic disease is a significant environmental hazard and includes a number of diseases that are present or usually prevalent in a population or geographical area at all times. [9]

**\*ENHANCED FIRST AID:** The immediate life-saving measures applied to a casualty by non-medically qualified personnel who are trained to control severe bleeding and maintain airway, breathing and circulation. Note: Bleeding and airway control for the most severely injured casualties are to be achieved within 10 minutes of wounding. (NATO Agreed, 9 Jul 2012) [1, 2, 7]

**ENHANCED PROCEDURE:** Enhanced procedures are those procedures intended to be performed only by an automated system due to complexity and/or time requirements. [15, 18]

**EpiNATO:** A NATO-sponsored deployment health surveillance system and is utilised in all NATO operations and exercises and is managed by the medical staff of deployed forces at all levels. It involves the monitoring, collection, and evaluation of illness/injury data on all deployed personnel who report for medical treatment support both, on an outpatient and inpatient basis. It is also set to run in conjunction with other national reporting systems. [5, 7]

**EXPECTANT TREATMENT:** This group comprises of patients who have received serious and often multiple injuries, and whose treatment would be time-consuming and complicated, with a low chance of survival. If fully treated they make heavy demands on medical manpower and supplies. Until the MASCAL situation is under control, they will receive appropriate supportive treatment. The extent of treatment will depend on available supplies and manpower and may involve the use of large doses of narcotic



analgesics. For these patients every effort should be devoted to their comfort, and the possibility of survival with even alarming injuries always kept in mind. Examples include: severe multiple injuries, severe head or spinal injuries, large doses of radiation, widespread severe burns. [7]

**EXPOSED TO TREAT:** The term 'expose to treat' is a medical order to another medic or decontamination team member, potentially from another nation, to remove a respirator and expose the upper torso, and arm and lower leg. This allows the assessment of the airway, respiration and allows intravenous or intraosseous antidotes administration. [9]

**EXPOSED PERSON:** This is an asymptomatic person that falls within the population at risk (PAR) following a suspected or confirmed release. Exposed persons may remain unaffected or become casualties during the latency period of the agent. [9]

**EXTERNAL CONTAMINATION:** External contamination is the coating of an external surface such as the skin, hair or clothing by a persistent agent. The agent may be liquid (including condensed vapour) or dry particulate. [9]

**EYE (OCULAR) (ROE):** Agents (gas/vapour and aerosol) may have a local effect on the eye such as nerve agent and miosis. Significant systemic absorption is less likely or significantly delayed due to a poor corneal blood supply. [9]

**FALLOUT:** (1) Contaminated particulate matter and debris absorbed into the cloud of a nuclear burst. (Not NATO Agreed, 1 Jul 2006) [1, 2, 4]; (2) The return to the lower atmospheric levels and to earth of radioactive substances projected to high altitude. (Not NATO Agreed, 1 Jul 2006) [1, 2, 4]; (3) The precipitation of radioactive debris or particles that occurs downwind from a nuclear device blast or other radioactive cloud source, potentially contaminating massive geographic areas. The term also applies just to the radioactive particulate matter itself. [16]

**FIELD BLANK:** A sample, taken at or near a sampling location, that can reasonably be assumed to contain no biological, chemical, or radiological agent content and that has a sample matrix similar to a normal sample. A field blank serves as a control in laboratory procedures. [16]

**FIELD DUPLICATE SAMPLE:** A second sample, taken at the same position and of the same material as an original sample. A field duplicate serves as a control in laboratory procedures. [16]

**FIRST AID:** (1) The first measures to assist and relieve individuals suffering from injuries, wounds, diseases, and NBC contamination. Initial treatment is usually provided through self/buddy aid or rendered by medical personnel. [5]; (2) First aid is the provision of care to trauma or CBRN casualties to save life or sustain an operation by non-medical or medical personnel. First aid should be delivered as soon as safe to do so and ideally within the first 10 minutes. In a CBRN environment this is likely to be in the most contamination, high-risk or even non-permissive environment (hot zone). [9]

**FIRST RESPONSE CAPABILITY:** First response capability encompasses bleeding and airway control for the most severe casualties. [7]

**\*FISSION PRODUCT:** (1) A complex mixture of substances produced as a result of nuclear fission. (NATO Agreed, 30 Apr 2013) [1, 2, 6]; (2) The nuclides produced when fissile nuclides like Uranium-235 and Plutonium-239 split apart (fission). This is the process that produces energy within nuclear reactors and nuclear weapons. [16]

**FLASH (TRAUMA FROM NUCLEAR DETONATION):** Causing afterimages, retinal damage and blindness. [9]

**\*FORCE PROTECTION:** All measures and means to minimize the vulnerability of personnel, facilities, equipment and operations to any threat and in all situations, to preserve freedom of action and the operational effectiveness of the force. (NATO Agreed, 22 Jun 2004) [1, 2, 3, 7, 8]

**FORCE HEALTH PROTECTION:** (1) Actions taken to counter the effects of the environment, occupational health risks, and disease through preventive and reactive measures. Obsolete term: Medical force protection. [5]; (2) A subset of force protection, force health protection is the sum of all efforts to reduce or eliminate the incidence of disease and non-battle injuries to enhance operational health readiness and combat effectiveness. [7, 8]

**FRIENDLY NUCLEAR STRIKE WARNING REPORT (STRIKWARN):** STRIKWARN reports provide information on an imminent nuclear strike from friendly forces and the associated Minimum Safe Distance (MSD). [15, 18]

**FULL CASUALTY DECONTAMINATION:** This is for persons contaminated with persistent agents with symptoms or signs of intoxication, infection, irradiation or injuries. It consists of two decontamination methods depending on whether the casualty can walk and/or is compliant. [9]

**FULL DECONTAMINATION:** This may be a single or two stage method depending on the agent and its physical properties. [9]

**GAMMA SPECTROSCOPY:** A radiation detection and analysis technique specifically designed to measure photon (e.g., gamma-ray and x-ray) energies. [16]

**GRAUDATED INDICENT RESPONSE:** A policy for response to a medical situation which is appropriate to deal with that situation, based on the information available, and which can be increased or decreased in terms of capability or capacity in a coordinated manner in order to deal effectively with the consequences of that situation. [5, 7]

**GROUNDSHINE:** Gamma-ray radiation from radioactive materials deposited on the ground. [16]

**HALF-LIFE:** (1) The time required for the activity of a given radioactive species to decrease to half of its initial value due to radioactive decay. The half-life is a characteristic property of each radioactive species and is independent of its amount or condition. The effective half-life of a given isotope is the time in which the quantity in the body will decrease to half as a result of both radioactive decay and biological elimination. (Deleted, 1 Apr 2015) [1, 2, 3, 6]; (2) The time in which half the atoms in a particular radioactive species transform to another nuclear form. [16]

**HAZARD AREA:** (1) A geographical or geometrical surface area that is susceptible to a hazard from a planned event or unplanned malfunction. (Not NATO Agreed, 1 Oct 2006) [1]; (2) An area in which unprotected personnel and materiel may be affected by an agent or TIM. [15, 18]

**\*HAZARD MANAGEMENT:** (1) In chemical, biological, radiological and nuclear defence, all preparatory and responsive measures taken to mitigate chemical, biological, radiological and nuclear hazards through avoidance, control of hazard spread, control and management of exposures, decontamination and waste management. (NATO Agreed, 1 Apr 2015) [1, 2, 4, 6, 14]; (2) Refers to those measures taken collectively to limit the operational impact of CBRN incidents. It is based on avoidance, control of spread, and decontamination. [13]; (3) A combination of preparatory and responsive measures designed to limit the vulnerability of forces to chemical, biological, radiological, nuclear and toxic industrial hazards and to avoid, contain, control exposure to and where possible neutralise them. [16]

**HAZARDOUS MATERIAL WARNING REPORT (HAZWARN):** HAZWARN reports provide warning of the possibility of a significant CBRN release caused by either friendly or an adversary action. [15, 18]

**\*HEALTH CARE OR HEALTH SERVICE SUPPORT:** All services provided directly or indirectly to contribute to the health and well-being of patients or a population. (NATO Agreed, 13 Dec 1999) [1, 2, 3, 7]

**HEALTH PHYSICS:** The science concerned with recognition, evaluation and control of hazards and potential health risks associated with radiation. [16]

**HEALTH SURVEILLANCE:** Post-exposure health surveillance is the long-term monitoring of the health (physical and mental) of an exposure population for predictable and unknown sequelae and may use tools such as a health registry and screening. [9]

**\*HOST NATION SUPPORT:** Civil and military assistance rendered in peace, crisis or war by a host nation to NATO and/or other forces and NATO organizations that are located on, operating on/from, or in transit through the host nation's territory. (NATO Agreed, 31 Jan 2014) [1, 3, 7]

**\*HOT SPOT:** (1) Region in a contaminated area in which the level of radioactive contamination is considerably greater than in neighbouring regions in the area. (NATO

Agreed, 1 Mar 1973) [1, 2, 3, 4]; (2) A localised region in a contaminated area in which agent levels are visually or otherwise detectably elevated in comparison to neighbouring regions in that area. [16]

**HOT ZONE:** The area of actual contamination. [16]

**ICON:** (1) A graphic symbol, \*displayed on a screen, to which a user can point with a device, such as a mouse, in order to select a particular function or software application. NOTE - The graphic symbol is usually a pictorial representation. (TAA, 1 Aug 2003) [1]; (2) A group of individuals sharing a common location over time. Each icon is given a unique numerical identifier and is associated with a set of attributes that is used to estimate what fraction of the CBRN Challenge will become the Effective CBRN Challenge. [12]

**ICON ATTRIBUTES:** A list of an icon's identifying information and challenge-modifying attributes with associated protection factors. Challenge-modifying attributes and associated protection factors can change over time, as specified by the user. [12]

**\*IDENTIFICATION:** (1) The process of attaining an accurate characterization of a detected entity by any act or means so that high confidence real-time decisions, including weapons engagement, can be made. (NATO Agreed, 10 Jan 2003) [1, 2, 3]; (2) Determination of the identity of an agent or material employed in a CBRN attack or resulting from release other than attack. This handbook distinguishes increasing levels of certainty in agent identification: provisional, confirmed, and unambiguous. [16]

**\*IMMEDIATE DECONTAMINATION:** (1) Decontamination carried out by individuals upon becoming contaminated. Note: This may include decontamination of some personal clothing and/or equipment. (NATO Agreed, 1 Apr 2015) [1, 2, 3, 6]; (2) This is the immediate application of absorbent and/or removal of exposed clothing from an unprotected individual to prevent further absorption and reduce secondary contamination risk. This is considered a first aid measure. [9]

**IMMEDIATE ONSET:** Symptoms and signs that occur during the exposure that may be early enough to allow for protective measures to be taken such as evacuation, wearing respiratory protection or medical countermeasure use. [9]

**IMMEIDATE PHASE:** The initial coordinated effort involved in performing rudimentary biological or chemical assessments. [16]

**IMMEDIATE THERAPY:** Immediate therapy is a medical countermeasure used to treat the initial effects of a CBRN agent based upon symptoms and signs. Immediate therapies may be administered by non-medical as well as medical personnel. These may be given by the casualty themselves (self-administered) or as a first aid by another (buddy-administered). [9, 13]

**IMMEDIATE TREATMENT:** To consist of those requiring emergency care and life-saving surgery. These procedures should not be time-consuming and should concern only those patients with high chances of survival. Examples include: respiratory obstruction, accessible haemorrhage, emergency amputation. [7]

**\*INCAPACITATING AGENT:** (1) A chemical agent which produces temporary disabling conditions which (unlike those caused by riot control agents) can be physical or mental and persist for hours or days after exposure to the agent has ceased. Medical treatment, while not usually required, facilitates a more rapid recovery. (NATO Agreed, 1 Mar 1982) [1, 2, 3, 4, 5]; (2) These agents cause a reversible mental or physical disability and inability to function. An example of mental incapacitants are BZ and LSD, while examples of physical incapacitants are admasite (DM) (vomiting agent) and Q fever. For some agents, an incapacitating dose (ID50) has been calculated. [9]

**INCIDENT RESPONSE TEAM (IRT):** (1) A team held at high readiness in order to deploy in response to a medical crisis. Notes: Incident Response Teams are an essential part of Graduated Incident Response, since Incident Response requires immediate reaction, preparedness and ability to respond to such an event. Incident Response Teams are rapidly deployable assets representing this capability. The medical component of an IRT should include trained, equipped and experienced specialist personnel to deal with the consequences of trauma or life-threatening illness. [5, 7]

**INCUBATION PERIOD:** A period of subclinical or inapparent pathologic changes following exposure, ending with the onset of symptoms of infectious disease. (Not NATO Agreed, 1 Jul 2006) [1, 4, 16]

**\*INDIVIDUAL PROTECTIVE EQUIPMENT:** (1) In chemical, biological, radiological and nuclear defence, the personal equipment intended to physically protect an individual from the effects of chemical, biological, radiological and nuclear substances. (NATO Agreed, 10 Apr 2014) [1, 2, 3, 12]; (2) In CBRN defence, the personal clothing and equipment required to protect an individual from chemical, biological and radiological hazards and some nuclear effects. This ordinarily includes but need not be limited to a respirator, whole body covering and simple detection, decontamination and first-aid devices. [16]

**INFECTIOUS DISEASE ASSESSMENT UNIT (IDAU):** This is an assessment area with a separate entry to the MTF. It is usually co-located with the PHC facility or deployed Emergency Department. It is for the initial assessment and emergency medical treatment of patients that may require fluid resuscitation and early management of sepsis including investigation. The IDAU is required on all operations and is most likely to be used for gastrointestinal diseases with standard and contact (enteric) precautions. The use of additional respiratory PPE will also allow droplet precautions to be taken. [9]

**INFECTIOUS DISEASE COHORT TREATMENT UNIT:** This is a disease-specific MTF to manage an outbreak of an infectious (and usually) contagious disease. The outbreak is usually on a scale that is beyond the capacity of a conventional field hospital or requires specialist isolation facilities or waste management. [9]

**\*INFORMATION:** Unprocessed data of every description which may be used in the production of intelligence. (NATO Agreed, 1 Nov 1991) [1, 2, 3, 7]

**INFORMATION MANAGEMENT:** The organization and control of information to support coalition missions, consultation, decision-making processes, and operational requirements. [13]

**INGESTION:** Agent (liquid, solid) eaten or drank. [9]

**INHALATION:** Agent (gas/vapour and aerosols) breathed in. [9]

**INJURY:** General term that includes wounds and disease. (AAP-06) Injuries may be caused by chemical, biological, radiological, radiation, blast, and thermal challenges. [12]

**INJURY SEVERITY LEVEL:** The degree of injury caused by the Effective CBRN Challenge, characterized by five integer levels and corresponding qualitative descriptions, as defined in Table 1-3. The definitions are expanded from those in AMedP-13 to include both medical requirements and operational capability. [12]

**INJURY PROFILE:** A tabular description of the progression of injury, expressed in terms of the step-wise Injury Severity Level changes over time, with time “zero” defined as the time at which the Effective CBRN Challenge stops accumulating. Injury Profiles only show time points at which the Injury Severity Level changes. In some cases, the last entry in a CRN Injury Profile is non-zero, in which case it is assumed that, without medical treatment, full recovery never occurs. [12]

**INNOCULATION (INJECTION):** Any penetration of the skin with minimal trauma in order to introduce the agent (liquid, solid). This route includes vectors such as arthropods transmitting biological agents and is also a common route for the administration of vaccines and auto-injectors. [9]

**INTERFERENCE:** (1) The evidence or effect on a detector of the presence of chemical or biological materials or organisms, other than those which it is employed to detect. (Not NATO Agreed, 1 Jul 2006) [1, 4]; (2) The evidence or effect on a detector or an analysis method of the presence of chemical or biological materials or organisms, or radionuclides other than those which the detector is employed to detect or the method is to measure. [16]

**\*INTELLIGENCE:** The product resulting from the directed collection and processing of information regarding the environment and the capabilities and intentions of actors, in order to identify threats and offer opportunities for exploitation by decision-makers. (NATO Agreed, 31 Oct 2003) [1, 2, 3, 7]

**INTERNAL CONTAMINATION:** Internal contamination occurs by inhalation, ingestion, transcutaneous (fat soluble liquids only for the latter) or wound. Relatively small quantities of agent are internalised by inoculation and are unlikely to represent a secondary hazard for responders. For chemical agents, internal contamination is not a significant issue with the exception of the skin reservoir associated with sulphur mustard

absorption. While the body has the ability to detoxify and neutralise some chemical agents and biological agents, some agents including radiological will require removal enhanced by medical intervention. [9]

**\*INTEROPERABILITY:** (1) The ability to act together coherently, effectively and efficiently to achieve Allied tactical, operational and strategic objectives. (NATO Agreed, 9 Dec 2009) [1, 2, 3, 4]

**\*ISOLATION:** (1) Separation of ill or contaminated persons or affected baggage, containers, conveyances, goods or postal parcels from others in such a manner as to prevent the spread of infection or contamination. (NATO Agreed, 25 Jun 2014) [1, 2, 9, 18]; (2) The separation of an infected individual from a healthy population. [5, 13]

**ISOLATION ROOM:** An isolation room is a single-occupancy patient-care room used to isolate persons with a suspected or confirmed contagious (transmissible) disease. [9]

**JOINT FORCE COMMANDER:** A general term applied to a commander (e.g. Commander of Allied Joint Force (COMAJF)) authorised to exercise command authority or operational control over a joint force. [7, 8]

**\*JOINT OPERATIONS AREA (JOA):** A temporary area defined by the Supreme Allied Commander Europe, in which a designated joint commander plans and executes a specific mission at the operational level of war. A joint operations area and its defining parameters, such as time, scope of the mission and geographical area, are contingency- or mission-specific and are normally associated with combined joint task force operations. (NATO Agreed, 17 Jan 2005) [1, 2, 3, 7, 8]

**\*KILLED IN ACTION:** A battle casualty who was killed outright or who died before reaching a medical treatment facility. (NATO Agreed, 7 Nov 2011) [1, 2, 12]

**KNO:** One of two possible categories for a CBRN 2 report that is used to correlate a non-nuclear CBRN 2 with an existing CBRN 2. A report is categorised as known if the operator previously has approved or allocated the report as part of validating correlated CBRN 2 reports. Compare with NEW. [15]

**LABORATORY:** Any laboratory, be it a remove fixed laboratory or a field laboratory. [16]

**LATE PHASE:** The final coordinated effort involved in performing comprehensive chemical or biological assessments at a level of detail not warranted in the previous immediate or urgent phases. [16]

**LESSONS LEARNED (LL):** A means by which the armed forces can institutionalise experience gained from operations and exercises. Lessons provide not only the driver but also the detail needed to amend the existing concepts, doctrine and TTPs. [7]

**LIFE-SAVING INTERVENTIONS (LSI):** Life-saving interventions are actions that can be performed by any person appropriately trained to reverse any life-threatening condition or prevent further deterioration in a casualty due to a CBRN agent and/or trauma. In a CBRN environment, LSI should only be performed on the most severe casualties (T1) with immediate life-threatening conditions. [9]

**LIMIT OF DETECTION:** The lowest detectable quantity, usually dependent on sample treatment and method of analysis; also referred to as 'method limit of detection'. [16]

**LIMITED DECONTAMINATION/REMOVAL OF CLOTHING:** This is likely if exposed to vapour as removal of clothing (disrobing) will remove the majority of the any trapped vapour thus removing any off-gassing hazard. Although there is little residual skin contamination, a light skin wipe may be considered to reassure the casualty. [9]

**LIQUID SCINTILLATION COUNTING:** A radiation detection and analysis technique specifically designed to detect and identify beta particles, especially low-energy betas. [16]

**LONG-TERM SEQUELAE:** Symptoms and signs that occur in period after the operational employment window (such as six months) where immediate causation may not be recognised but may be diagnosed as part of post-operational health surveillance provided either by military or civilian primary healthcare systems. [9]

**LOW-LEVEL RADIATION (LLR):** Radiation above natural background radiation, but not resulting from a deliberate and successful nuclear weapon detonation. [16]

**MASS CASUALTY (MASCAL) SITUATION:** An event in which excessive disparity exists between the casualty load and the medical capabilities locally available for its conventional management. [5, 7, 8, 13]

**MEDICAL ADVISOR:** The senior medical staff officer (physician) in a formation headquarters responsible for ensuring that the commander and his staff are properly aware of the health and medical implications of their actions and any force health issues connected to the operation. Note: The Medical Advisor may also be designated as the Force or Theatre Medical Director. [5, 7, 8]

**MEDICAL COORDINATION CELL (MCC):** The executing body of the medical organisation for all CJTF operations, working under the direction of the Medical Director to co-ordinate multinational, joint and multifunctional medical issues, including evacuation. [5, 7, 13]



**MEDICAL COUNTERMEASURES:** (1) Those medical interventions designed to diminish the susceptibility of personnel to the lethal and damaging effects of chemical, biological and radiological hazards and to treat injuries arising from exposure to such hazards. [7, 8, 12] (2) MedCM are pharmaceutical products designed to diminish the susceptibility of personnel to the lethal and damaging effects of chemical, biological and radiological hazards and to treat the effects arising from exposure to such hazards. [9]; (3) Are medical interventions, generally pharmaceuticals that mitigate the impact of human exposure to CBRN hazard. [13]

**MEDICAL DIRECTOR:** The functional head of the medical services in a formation or theatre of operations. Note: The Medical Director may also have the additional responsibilities of being the Medical Advisor to a senior commander. [5, 7]

**\*MEDICAL EVACUATION:** The medically supervised process of moving any person who is wounded, injured or ill to and/or between medical treatment facilities as an integral part of the treatment continuum. (NATO Agreed, 28 Oct 2013) [1, 2, 5, 7, 8]

**\*MEDICAL INTELLIGENCE:** Intelligence derived from medical, bio-scientific, epidemiological, environmental and other information related to human or animal health. Note: This intelligence, being of a specific technical nature, requires medical expertise throughout its direction and processing within the intelligence cycle. (NATO Agreed, 31 Oct 2003) [1, 2, 3, 5, 7, 8]

**MEDICAL RECONNAISSANCE:** To enable appropriate planning and preparation it is important to undertake a timely and complete reconnaissance of the JOA with the supporting participation of medical subject matter experts. The medical staff assigned to the reconnaissance team must possess adequate knowledge and experience in the provision of medical support at the civil-military medical interface. [7]

**MEDICAL RECORD KEEPING:** Covers the recording and processing of medical information on a patient to include personal medical details and clinical history, as well as details of medical care and evacuation provided. [7]

**MEDICAL REGULATION:** The process of directing, controlling and coordinating the transfer of patients within and outside a JOA. This means from point of wounding or onset of disease and through a continuum of care, in order to facilitate the most effective use of medical treatment and evacuation resources, and to ensure that the patient receives appropriate care in a timely manner. [7, 13]

**MEDICAL SCREENING:** Medical screening is the active assessment at a specific time of a well person who may have been exposed to a suspected hazard or have an epidemiological link to a probable or confirmed case. [9]

**MEDICAL SUPPORT:** Encompasses the prevention of illness or injury, the detection of CBRN attacks via health and disease surveillance, the evacuation and treatment of CBRN casualties, and the rapid return to duty of as many individuals as possible. [13]

**MEDICAL SUPPLY:** The process of procurement, storage, movement, distribution, maintenance and disposition of medical material and pharmaceuticals, including blood, blood components and medical gases, in order to provide effective medical support and the application of this process in planning and implementation. [7]

**METEOROLOGICAL DATA:** Facts or information, pertaining to motions and phenomena of atmosphere, especially for weather forecasting. [15]

**MID-SPECTRUM AGENT (MSA):** A toxic chemical or biological origin, either a toxin or a bioregulator. A mid-spectrum agent distinguishes itself 1) from biological agents (viruses, bacteria, spores, fungi) in the lack of self-multiplication capability and 2) from chemical agents because it is of biological origin. [16]

**MILD (INJURY SEVERITY LEVEL):** Injury is manifesting symptoms (and signs for biological agents) of such severity that individuals can care for themselves or be helped by untrained personnel. Condition may not impact the ability to conduct the assigned mission. [12]

**MILLISIEVERT (mSv):** An SI unit of radiation dose equivalent. The dose equivalent is the product of absorbed dose and a radiobiological dose modifier call the quality factor. [16]

**MINIMAL TREATMENT:** To consist of those with relatively minor injuries who can effectively care for themselves or who can be helped by untrained personnel. Examples include: minor lacerations, abrasions, fractures of small bones and minor burns. [7]

**MISSILE INTERCEPT REPORT (MIR):** MIR provides warning on the intervention of an adversary incoming missile and the associated predicted hazard area. [15, 18]

**MIXED FISSION PRODUCTS:** A complex mixture of fission fragments and decay particles that follow nuclear fission events. [16]

**MODERATE (INJURY SEVERITY LEVEL):** Injury is manifesting symptoms (and signs for biological agents) of such severity that medical care may be required. General condition permits treatment as outpatient and some continuing care and relief of pain may be required before definitive care is given. Condition may be expected to interrupt or preclude the ability to conduct the assigned mission. [12]

**\*MONITORING:** (1) The act of listening, carrying out surveillance on, and/or recording the emissions of one's own or Allied forces for the purpose of maintaining and improving procedural standards and security, or for reference, as applicable. (NATO Agreed, 1 Jul 1983) [1, 2, 3]; (2) The act of listening, carrying out surveillance on, and/or recording of enemy emissions for intelligence purposes. (NATO Agreed, 1 Jul 1983) [1, 2, 3]; (3) The act of detecting the presence of radiation and the measurement thereof with radiation measuring instruments. (NATO Agreed, 1 Jul 1983) [1, 2, 3]; (4) A continuous or periodic process of determining the presence or absence of chemical, biological or radioactive hazards. This may or may not include quantification. Usually distinguished as radiological, chemical, or biological monitoring. [16]

MUCOSA (ROE): This route, including the conjunctiva, is susceptible to chemical agents such as sulphur mustard, and live biological agents including blood borne and haemorrhagic fever viruses. [9]

MULTINATIONAL FORCE: A force composed of elements of two or more nations. [3, 7]

\*NATIONAL SUPPORT ELEMENT: Any national organization or activity that primarily supports national forces that are part of a NATO force. Note: A national support element is under the operational control of its national authorities and not normally part of a NATO force. (NATO Agreed, 25 Sep 2013) [1, 7]

NEW: One of two possible categories for a CBRN 2 report that is used to correlate a non-nuclear CBRN 2 with an existing CBRN 2. Any report that cannot be categorised as known is categorised as new. [15]

NO DECONTAMINATION REQUIRED: This is most likely after exposure to non-persistent agents such as a gas that is lighter than air, or to an intact radiation source where there is no contamination hazard. Removal of clothing may still be a requirement to allow access to the casualty for treatment. [9]

NO OBSERVABLE INJURY (NOI): Although some exposure to an agent or effect may have occurred, no observable injury (as would be indicated by manifested symptoms) has developed. Alternately, recovery from a prior injury is complete. [12]

\*NUCLEAR CASUALTY: (1) A casualty caused by exposure to a nuclear flash, blast, heat or radiation. (NATO Agreed, 25 Jun 2014) [1, 2, 12]; (2) Any person who is lost to the organization by reason of having been declared dead, wounded or injured as a result of exposure to nuclear flash, blast, heat or radiation. [5]; (2) Are casualties caused by a nuclear detonation. [13]

\*NUCLEAR WEAPON: A complete assembly (i.e. implosion type, gun type, or thermonuclear type), in its intended ultimate configuration which, upon completion of the prescribed arming, fusing and firing sequence, is capable of producing the intended nuclear reaction and release of energy. (NATO Agreed, 1 Nov 1983) [1, 2, 3, 4, 9, 18]

OPERATION: (1) A sequence of coordinated actions with a defined purpose. Note: 1. NATO operations are military. 2. NATO operations contribute to a wider approach including non-military actions. (NATO Agreed, 10 Apr 2014) [1, 2, 3]; (2) A military action or the carrying out of a strategic, tactical, service, training, or administrative military mission; the process of carrying on combat, including movement, supply, attack, defence and manoeuvres needed to gain the objectives of any battle or campaign. [7]

**\*OPERATIONAL CONTROL:** The authority delegated to a commander to direct forces assigned so that the commander may accomplish specific missions or tasks which are usually limited by function, time, or location; to deploy units concerned, and to retain or assign tactical control of those units. It does not include authority to assign separate employment of components of the units concerned. Neither does it, of itself, include administrative or logistic control. (NATO Agreed, 1 Oct 2001) [1, 2, 3, 7]

**OPERATIONAL EPIDEMIOLOGY:** In a CBRN context, operational epidemiology is the investigation of known or suspected CBRN incidents or biological-agent-induced disease outbreaks to determine their source, nature, and magnitude. [13]

**OPERATIONAL EXPOSURE GUIDANCE (OEG):** The accumulated radiation exposure, or dose, that a Commander prescribes to limit radiological risks to personnel for a specific time period, or a specific mission, consistent with current military operational considerations. [16]

**\*OPERATIONAL LEVEL:** The level at which campaigns and major operations are planned, conducted and sustained to accomplish strategic objectives within theatres or areas of operations. (NATO Agreed, 15 Jan 2008) [1, 2, 3, 7, 13]

**OPERATIONAL ROM:** The in-theatre restriction of contact between healthy personnel and those who have, or are suspected of having, contracted a contagious disease in order to maintain operational military capability. [13]

**ORGANISATIONS, GOVERNMENTAL:** Organisations that are sponsored and financed by individual governments. [7]

**ORGANISATIONS, INTERNATIONAL:** (1) An intergovernmental, regional or global organization governed by international law and established by a group of states, with international juridical personality given by international agreement, however characterized, creating enforceable rights and obligations for the purpose of fulfilling a given function and pursuing common aims. [3, 7]

**ORGANISATIONS, NON-GOVERNMENTAL:** (1) A private, not for profit, voluntary organization with no governmental or intergovernmental affiliation, established for the purpose of 2-N-5 fulfilling a range of activities, in particular development-related projects or the promotion of a specific cause, and organized at local, national, regional or international level. [3, 7]

**OVERLAY:** (1) The substitution of part of a picture by another picture using masking. (TAA, 30 Jun 2003) [1]; (2) A printing or drawing on a transparent or semitransparent medium at the same scale as a map, chart, etc. to show details not appearing or requiring special emphasis on the original. [15]

**OVERT (METHOD OF DELIVERY):** This method may use of an obvious method of delivery such as munitions, bombs, projectiles, spray tanks and warheads. A release of a large quantity of agent may also be indicative of an attack, such as a cloud of chlorine. [9]

**PACKAGE:** The sample package is the container and materials used to seal up the sample and transport it from where it was collected to the laboratory for analysis. [16]

**PASSIVE IMMUNISATION:** Immunoglobulins (antibodies other than antitoxin) or parts of them are transferred to a person so that the body does not need to produce these elements itself. This method of immunisation begins to work very quickly, but it is short duration because the antibodies are naturally broken down and they are not further reproduced by the recipients. [9]

**PATIENT MANAGEMENT:** Is a group of post-incident medical capabilities that are applied to preserve the health of the force, to deliver optimal care to casualties, and to maximize the rate at which casualties return to duty. [7]

**PATIENT TRACKING:** The precise and continuous monitoring of the location and the intended destination of the patient in the medical treatment and evacuation chain. [5, 7]

**\*PEACEKEEPING:** (1) A peace support effort designed to assist the implementation of a ceasefire or peace settlement and to help lay the foundations for sustainable peace. Note: Peacekeeping is conducted with the strategic consent of all major conflicting parties. (NATO Agreed, 20 Nov 2014) [1, 2, 3, 7]

**\*PERSISTENCY:** The characteristic of a chemical or biological agent that pertains to the duration of its effectiveness in the environment. (NATO Agreed, 31 Oct 2013) [1, 2, 6, 15]

**\*PHYSICAL PROTECTION:** (1) The measures and equipment intended to provide protection to personnel and materiel in a chemical, biological, radiological or nuclear environment. (NATO Agreed, 1 Apr 2015) [1, 2, 6, 14]; (2) Is protection provided to an individual in a CBRN environment by protective clothing and/or personal equipment. [7]; (3) In chemical, biological, radiological and nuclear defence, a vehicle or shelter that protects an individual from the effects of chemical, biological, radiological and nuclear substances. [12]; (4) Consists of individual protective equipment (IPE), collective protection (COLPRO), and equipment and materiel protection. [13]

**PHYSICAL REMOVAL:** This is the mechanical method of removing a persistent contaminant. [9]

**PLUME:** A cloud, or similar formation, of airborne radioactivity, chemical or biological material. [16]

**\*POPULATION AT RISK (PAR):** (1) A limited population that may be unique for a specific explosives risk. (NATO Agreed, 1 Oct 2006) [1]; (2) A group of individuals exposed to conditions which may cause injury or illness. [5]; (3) A group of individuals considered at risk of exposure to conditions which may cause injury or illnesses. [12]

**POS: POSSIBLE correlation criteria for correlation of nuclear CBRN 2 with existing CBRN 2.** [15]

**POST-EXPOSURE PROPHYLAXIS:** Post-exposure prophylaxis is a medical countermeasure used after an exposure has been detected in order to prevent the effects of the CBRN agent. It requires a detect capability in order to take advantage of the window of opportunity (WOO) between exposure to an agent and the development of any irreversible consequences. [9, 10]

**POST-INCIDENT PHASE:** These activities follow a CBRN incident and are essential to protect assets, restore operational capabilities, and regain operating tempo. These measures will be performed to reduce the required level of protection and minimize the spread of contamination. [7, 13]

**PRECIPITATION:** Rain, snow etc. falling to ground. [15]

**PRECISION:** (1) The degree of discrimination with which a quantity is stated. For example, a three-digit numeral discriminates among 1000 possibilities. (TAA, 1 Aug 2003) [1]; (2) In analytical measurements, precision describes the exactness of a given result. Usually, this is expressed by the number of significant digits in which the data is presented. [16]

**PRE-EXPOSURE PROPHYLAXIS:** Pre-exposure prophylaxis describes the administration of MedCM before detection of an exposure in order to prevent the effects of a CBRN agent. These may be given days, weeks or even months in advance. [9, 13]

**PRE-INCIDENT PHASE:** During this phase, threat and hazard assessments are generated and appropriate response measures and available equipment are planned, assessed for sufficiency, prepared, tested, and, if necessary for some measures, implemented. In accordance with their missions, medical organizations assist with provision of adequate shelter, establishment of safe food and water sources, and ensuring that preventive measures and curative treatments are available. [7, 13]

**PRE-TREATMENT:** Pre-treatments are therapy enhancers that are administered before exposure to enhance the efficiency of subsequent post-exposure therapy. [9, 13]

**PREVENTIVE MEDICINE:** The services that are concerned with identifying, preventing, and controlling acute and chronic communicable and non-communicable diseases, illnesses, and injuries, with food and environmental hygiene, and with vector control. [5, 7, 8]

**PRIMARY HEALTH CARE:** The provision of integrated, accessible health care services by clinical personnel trained for comprehensive first contact and the continuing care of individuals experiencing signs and symptoms of ill health or having health concerns. Explanation: Primary Health Care includes health promotion, disease prevention, patient education and counselling, and the diagnosis and treatment of acute and chronic illness. [5, 7]

**PRIMARY SURGERY:** The surgical procedures directed at repair of the local damage caused by wounding, rather than correcting the generalised effects, which is performed normally at Role 3. Note: Delays to primary surgery allow further generalised effects to develop that may lead to an increase in mortality, morbidity and residual disability. [5, 7]

**PRO: PROBABLE** correlation criteria for correlation of nuclear CBRN 2 with existing CBRN 2. [15]

**PROBABLE (LEVEL OF CERTAINTY FOR DIAGNOSIS):** A clinically compatible case (including biological syndromes and toxidromes) in which a high index of suspicion (i.e. a credible threat or detection warning) exists for exposure to a particular CBRN agent, or a case with an epidemiologic link to a laboratory-confirmed case. [9]

**PROPHYLAXIS:** Medical countermeasures administered before the onset of signs and symptoms (can be pre- or post-exposure). [12]

**\*PROTECTION FACTOR:** A measure of the effectiveness of a protective device or technique in preventing or reducing exposure to chemical, biological, radiological and nuclear substances, or of a medical treatment in preventing or reducing the physiological effects of such substances. (NATO Agreed, 10 Apr 2014) [1, 2, 6, 12]

**PROVISIONAL IDENTIFICATION:** Provisional identification is the level of identification that distinguishes between type of radiation measured (alpha, beta, and gamma) using hand-held meters by non-specialists. [16]

**PSYCHOLOGICAL CASUALTY:** This casualty type is complex. Symptoms range from mild anxiety and acute stress reaction through to mental incapacitation due to reduced level of consciousness, delirium or psychosis. Symptoms may also be delayed or long-term and include post-traumatic stress disorder. Psychological effects due to CBRN agents may be direct or indirect. In most cases, symptoms may be present with exposure to an agent and this is called psychogenic. [9]

**QUALITY ASSURANCE (QA):** (1) The planned systematic activities necessary to ensure that a component or system conforms to established technical requirements. (TAA, 1 Aug 2003) [1]; (2) In analytical measurements, QA is the entire system of strategy and procedures necessary to ensure confidence in measured data and how that data is managed. [16]

**QUALITY CONTROL (QC):** In analytical measurements, QC is the component of QA that ensures specific measurement procedures and processes are properly executed. [16]

**\*QUARANTINE:** (1) The restriction of activities and/or separation from others of suspect persons, plants or animals that are not ill or diseased or of suspect baggage, containers, conveyances or goods in such a manner as to prevent the possible spread of infection or contamination. (NATO Agreed, 25 Jun 2014) [1, 2, 9]; (2) The confinement

and active continued health surveillance of an individual who is suspected of having been exposed to an infectious agent, until it is determined that they are free of infection. [5, 13]

**\*RADIATION (IONIZING RADIATION):** (1) Radiation consisting of particles, X-rays, or gamma rays with sufficient energy to cause ionization in the medium through which it passes. (NATO Agreed, 1 Apr 2015) [1, 2, 4]; (2) Alpha particles, beta particles, gamma-rays, x-rays, neutrons, protons, electrons and other particles capable of producing ions. [16]

**RADIATION/RADIO NUCLEAR INCIDENT:** An event related to the intentional use or accidental release of radioactive materials leading to the radioactive contamination of the environment and potential exposure (of personnel) to ionizing radiation. [11]

**RADIOLOGICAL CASUALTY:** Radiological casualties result from exposure to ionizing radiation and can occur in incidents in which radiation is deliberately or accidentally released. [13]

**\*RADIONUCLIDE or RADIOISOTOPE:** An unstable isotope of an element that decays or disintegrates spontaneously, emitting radiation. Note: Each radionuclide emits a specific type and energy of radiation, which may be used for identification. (NATO Agreed, 31 Oct 2013) [1, 2, 6, 16]

**RADIOLOGICAL (DEVICE):** A radiological device is designed to employ radioactive material by dissemination it to cause destruction, damage or injury by means of the radiation produced by the decay of such material. [18]

**RADIOLOGICAL DISPERSAL DEVICE (RDD):** (1) An improvised weapon, designed to disperse radionuclides. [5, 11]; (2) This is a device that causes an overt or covert deliberate spread of radioactive material for the purpose of causing either irradiation, contamination, psychological effect or combination. Some devices may also be dispersed by an explosive device ('dirty bomb'). [9]

**\*RADIOLOGICAL CASUALTY:** (1) A casualty caused by exposure to ionizing radiation. (NATO Agreed, 25 Jun 2014) [1, 2, 9, 12]; (2) Any person who is lost to the organization by reason of having been declared dead, wounded or injured as a result of exposure to nuclear flash, blast, heat or radiation. [5]

**REACTIVE (PSYCHOLOGICAL EFFECTS):** These casualties range from an appropriate level of anxiety from low risk ('worried well') to acute stress reaction, acute stress disorder and post-traumatic stress disorder. [9]

**RELEASE AREA:** The area predicted to be initially affected by a chemical, biological, radiological or nuclear hazard. [15, 18]

**RELEASE OTHER THAN ATTACK:** The deliberate or unintended creation of a CBRN environment by any means other than the employment of CBRN weapons authorised for



use by a nation state. The term's acronym, ROTA, is no longer officially used, but the term concisely describes a host of scenarios. [16]

**REMOVAL OF CLOTHING (DISROBING):** This is the removal of IPE or standard clothing as the first stage in full decontamination. This stage of decontamination is the most important as it may remove most of the contaminant. [9]

**\*RESTRICTION OF MOVEMENT:** A measure for controlling the spread of a contagious disease by restricting contact between healthy groups of personnel and those who either have, or are suspected of having, contracted a contagious disease. (NATO Agreed, 28 Oct 2013) [1, 2, 5, 8, 9]

**\*RETURN TO DUTY (RTD):** The administrative process of releasing a patient from medical treatment facility to his or her unit. (NATO Agreed, 25 Jun 2014) [1, 2, 5, 12]

**ROLE SPECIALISATION:** One nation assumes the responsibility for procuring a particular class of supply for all or a part of the multinational force. Compensation and/or reimbursement will then be subject to agreements between the parties involved. [7]

**SAMPLE:** The environmental or biomedical sample collected at a CBRN event site and suspected of containing a CBRN agent. [16]

**SAMPLING:** The retrieval for analysis of material known or suspected to have been employed in a CBRN attack or to have arisen from release other than attack. [16]

**\*SAMPLING AND IDENTIFICATION OF BIOLOGICAL, CHEMICAL, AND RADIOLOGICAL AGENTS:** The collection and transportation of materials suspected to contain chemical, biological and radioactive substances and the identification of such substances within the chain of custody in support of the investigation of a chemical, biological, radiological or nuclear incident. (NATO Agreed, 20 Nov 2014) [1, 2, 6, 14]

**SCREENING:** (1) A process for inspecting items to remove those that are unsatisfactory or those likely to exhibit early life failure. Inspection includes visual examination, physical dimension measurement and functional performance measurement under specified environmental conditions. (Not NATO Agreed, 1 Jul 2001) [1]; (2) Sampling or survey procedures that are designed to rapidly provide information pertinent to a decision as to whether or not more detailed sampling or survey procedures should be conducted. [16]

**SECONDARY HEALTH CARE:** The provision of hospitalisation and specialised clinical care requiring training and equipment levels beyond that which could normally be provided at the level of primary care. Explanation: Routine access to these services will normally be by referral from Primary Health Care. Urgent access will normally be via an Emergency Medicine department. This capability will be found, in varying degrees of capability, at Roles 2 to 4 Medical Treatment Facilities. [5, 7]

**SEDATION (PSYCHOLOGICAL EFFECTS):** This is a reduction of consciousness that is a form of mental incapacitation. The mild form will lead to psychological impairment and the most severe form is coma and potential death due to the suppression of vital brain functions such as respiration. [9]

**SEVERE (INJURY SEVERITY LEVEL):** Injury is manifesting symptoms (and signs for biological agents) of such severity that there is cause for immediate concern, but there is no imminent danger to life. Individual is acutely ill and likely requires hospital care. Indicators are questionable—condition may or may not reverse without medical intervention. Individual is unable to conduct the assigned mission due to the severity of the injury. [12]

**SIMPLIFIED PROCEDURE:** Simplified procedures are those procedures intended to be manually performed by a CBRN defence staff immediately upon receipt of a message indicating a new CBRN incident. [15, 18]

**SMEARS:** A surface contamination sampling technique. [16]

**SPORES:** The dormant form of some bacteria that prolongs their viability in adverse environmental circumstances. [16]

**STABILISATION:** The maintenance of tissue perfusion and oxygenation. [5, 7];

**STANDARDISATION AGREEMENT (STANAG):** (1) A NATO standardization document that specifies the agreement of member nations to implement a standard, in whole or in part, with or without reservation, in order to meet an interoperability requirement. Note: A NATO standardization agreement is distinct from the standard(s) it covers. [3, 7]

**\*STRATEGIC LEVEL:** The level at which a nation or group of nations determines national or multinational security objectives and deploys national, including military, resources to achieve them. (NATO Agreed, 15 Jan 2008) [1, 2, 3, 7]

**STRATEGIC ROM:** The restriction of movement of personnel into and out of theatre, in order to prevent the international spread of disease and protect home nations. [13]

**STRETCHER (NON-AMBULATORY) DECONTAMINATION:** This method is used for non-ambulatory casualties (T1 or T2) and may also be used for incapacitated or non-compliant casualties as a safer and easier method of casualty handling. T1 casualties will receive concurrent Emergency Medical Treatment (EMT) while undergoing stretcher decontamination. [9]

**STRIKE SERIAL NUMBER (SS):** Strike serial number correlation criteria for correlation of nuclear CBRN 2 with existing CBRN 2. [15]

**SUPPORTIVE MANAGEMENT (ADVANCED MEDICAL CARE):** During CBRN casualty management, the causative agent may not be known or suspected. Treatment may still be effective by adequate supportive treatment focused on managing the

observed clinical symptoms and signs. In some cases even when the agent is known, there may be no definitive treatment such as an antidote and treatment may remain supportive throughout the casualty continuum of care including critical care with ventilation, circulatory and renal support. [9]

**SUSPECTED (LEVEL OF CERTAINTY FOR DIAGNOSIS):** A case in which a potentially exposed person is being evaluated by medical personnel for CBRN medical effects, but no specific credible threat exists or detection warning has been made. [9]

**\*SUSTAINABILITY:** The ability of a force to maintain the necessary level of combat power for the duration required to achieve its objectives. (NATO Agreed, 1 Feb 1989) [1, 2, 3, 7]

**SWIPES:** Same as smears. [16]

**\*TACTICAL LEVEL:** The level at which activities, battles and engagements are planned and executed to accomplish military objectives assigned to tactical formations and units. (NATO Agreed, 15 Jan 2008) [1, 2, 3, 7]

**\*TELECONSULTATION:** Exchange of clinical information among medical and dental care providers separated by distance to provide or improve patient care, using information and communication technologies. (NATO Agreed, 11 May 2012) [1, 2, 5, 7]

**\*TELE-MEDICINE:** (1) The practice of medicine over a distance using information and communication technologies. (NATO Agreed, 11 May 2012) [1, 2]; (2) The use of information and communications technologies to exchange health information and provide healthcare services regardless of time and distance. Note: depending on the clinical specialty involved, this may incorporate such terms as teleradiology, teledermatology, telesurgery, telepathology and telepsychiatry. [5, 7]

**THEATRE HOLDING POLICY:** A command decision for planning purposes indicating the maximum length of time (days) that a patient will be allowed to remain in the theatre for treatment, recovery and return to duty. Explanation: If the prognosis is that recovery will take longer than the timelines set by holding policy, then the patient should be evacuated as soon as he/she is considered suitable for evacuation. [5, 7, 8]

**THERMAL INJURY (TRAUMA AND NUCLEAR DETONATION):** These are due to the initial intense flash and fireball with further injuries secondary to any fires ignited. These thermal injuries are different to burns caused by ionising radiation. [9]

**TIC AND TIM CASUALTIES:** result from the inhalation, ocular, and/or skin exposure to TICs and TIMs. [13]

**\*TOXIC INDUSTRIAL BIOLOGICAL (TIB):** (1) Preferred term - toxic industrial material. (NATO Agreed, 12 Dec 2015) [1, 2]; (2) A sub-category of Toxic industrial materials [16]

**\*TOXIC INDUSTRIAL CHEMICAL (TIC):** (1) Preferred term - toxic industrial material. (NATO Agreed, 12 Dec 2015) [1, 2]; (2) Are toxic chemicals or other substances used for industrial, commercial, medical, or other non-military purposes. [13]; (3) A sub-category of Toxic industrial materials [16]

**\*TOXIC INDUSTRIAL MATERIAL (TIM):** (1) A generic term for toxic or radioactive substances in solid, liquid, aerosolized or gaseous form. These may be used, or stored for use, for industrial, commercial, medical, military or domestic purposes. TIM may be chemical, biological or radioactive and described as toxic industrial chemical, toxic industrial biological or toxic industrial radiological. (NATO Agreed, 12 Dec 2015) [1, 2, 4, 9, 16]; (2) Are toxic chemicals or other substances used for industrial, commercial, medical, or other non-military purposes. [13]

**\*TOXIC INDUSTRIAL RADIOLOGICAL (TIR):** (1) Preferred term - toxic industrial material. (NATO Agreed, 12 Dec 2015) [1, 2]; (2) A sub-category of Toxic industrial materials [16]

**\*TOXIN:** The poisonous product of a living organism. Note: A toxin may also be synthesized. (NATO Agreed, 31 Oct 2013) [1, 2, 4, 6, 16]

**TRANSCUTANEOUS:** Agent (liquid, solid) is absorbed through intact skin without initially breaking it although absorption may be slower by this route and vary depending on blood flow and thickness. Unbroken skin is resistant to most biological agents. Normal field hygiene should be used. [9]

**TRANSURANIC NUCLIDES:** Transuranic nuclides are those with an atomic number greater than 92 (corresponding to Uranium). They include isotopes of plutonium and americium, used in a variety of applications. [16]

**TREATMENT:** Medical countermeasures administered after the onset of signs and symptoms. As warranted by the challenge type, first aid/buddy aid and later medical treatment are considered separately. [12]

**\*TRIAGE:** (1) The evaluation and classification of wounded for purposes of treatment and evacuation. It consists of the immediate sorting of patients according to type and seriousness of injury, and likelihood of survival, and the establishment of priority for treatment and evacuation to assure medical care of the greatest benefit to the largest number. (NATO Agreed, 1 Nov 1977) [1, 2, 3, 8]; (2) The dynamic process of sorting casualties to identify the priority of treatment and evacuation of the wounded, given the limitations of the current situation, the mission, and the available resources. Synonym: sorting. Note: Triage is a system of dealing with patients when the number and severity of casualties exceeds the resources available. In such situation the medical response is focused on providing the greatest benefit to the largest number of patients rather, than providing early definitive treatment to each patient on the basis of individual needs. [5]; (3) Triage is a continuous and dynamic process used at key chokepoints either for a medical intervention of transport. Triage may be repeated if there is a delay in medical evacuation as casualties may improve or deteriorate. [9]

UNALLOCATED: CBRN 1 and CBRN 4 messages that cannot be allocated to existing CBRN messages in the system. [15]

UNAMBIGUOUS: Unambiguous identification is the level of identification that produces a complete isotopic identification and activity for all types of emitters (alpha, beta, gamma and neutron). Analysis is completed and interpreted by specialists only at a fixed laboratory. [16]

URGENT PHASE: The phase of operations between the immediate phase and the late phase in which detailed assessments are initiated. [16]

VACCINATION: (1) The administration of antigenic material to produce immunity to a disease, in order to prevent or ameliorate the effects of infection by a pathogen. Note: the term 'vaccination' in the military medical environment is used in the broad sense adopted by the World Health Organization so as to cover all procedures known as 'immunisation', 'innoculation', and 'vaccination'. [5]; (2) Active immunisation (vaccination ) encourages the recipients to develop their own immune response to a biological agent including toxins. Multiple doses may be required before maximal protection over a long period (up to six months). This is usually administered by medical personnel although authorised by the chain of command. [9]

VECTOR: In biological warfare, an animate intermediary in the indirect transmission of an agent that carries the agent from a reservoir to a susceptible host. (Not NATO Agreed, 1 Jul 2006) [1, 4, 16]

VERY SEVERE (INJURY SEVERITY LEVEL): Injury is manifesting symptoms (and signs for biological agents) of such severity that life is imminently endangered. Indicators are unfavorable—condition may or may not reverse, even with medical intervention. Prognosis is death without medical intervention. Individual is unable to conduct the assigned mission and is not expected to return to the mission due to severity of injury. [12]

VIGNETTE: Vignettes are generic descriptions of a 'possible chemical incident' in such a campaign/engagement. A vignette therefore is more a 'snapshot incident' within a campaign. [17]

VIRULENCE: (1) The proportion of persons which clinical disease who, after becoming infected, become severely ill or die. Normally qualified as, for example, 'high ', 'low' or 'negligible'. (Not NATO Agreed, 1 Jul 2006) [1, 4]; (2) The degree of pathogenicity of a biological agent, in other words the relative ability of a biological agent to cause disease. [16]

**WALKING (AMBULATORY) DECONTAMINATION:** This method is used for the walking and compliant casualties and is similar to personnel decontamination. Casualties with injuries or minor incapacitation may require assistance and all casualties should be escorted and observed. [9]

**WARM ZONE:** Or decontamination zone or the contamination reduction zone. The area between actual contamination and no contamination where decontamination operations are located. [16]

**WARNING:** A command approved statement that a chemical, biological, radiological or nuclear attack or release other than attack has occurred or is presumed to have occurred. (Not NATO Agreed, 1 Jul 2006) [1, 4, 15]

**\*WARNING AND REPORTING:** In chemical, biological, radiological and nuclear defence, the process by which information on chemical, biological, radiological and nuclear incidents is collected, processed and distributed through the command structure in a timely and accurate manner in order to inform of resulting hazards and predicted hazard areas. (NATO Agreed, 31 Oct 2013) [1, 2, 4, 15, 16]

**WEAPON OF MASS DESTRUCTION (WMD):** A weapon that is able to cause widespread devastation and loss of life. (NATO Agreed, 20 Nov 2014) [1, 3, 6, 14]

**WEATHER REPORTS:** Weather reports provide detailed weather information such as temperature, humidity, wind speed, wind direction, precipitation and stability that must be obtained to determine the effects of a CBRN hazard on surrounding environment of the incident. [15, 18]

**WOUND (ROE):** (1) An injury to tissue including and usually going beyond the cutting, piercing, tearing or breaking of the skin. [5]; (2) Any contamination after significant breaking of the skin barrier following a traumatic event. [9]

**WOUND DECONTAMINATION:** The introduction of an agent into an area of traumatised tissue. A secondary hazard to responders including surgical teams may be present, however the greater the potency of the agent the less likely the casualty is to survive before surgery and therefore the risk tends to be self-limiting. Devitalised tissue may also act as a buffer to limit systemic absorption of an agent. [9]

**\*WOUNDED IN ACTION (WIA):** (1) A battle casualty who has incurred a non-fatal injury due to an external agent or cause as a result of hostile action. (NATO Agreed, 7 Nov 2011) [1, 2, 3]; (2) A battle casualty other than "killed in action" who has incurred an injury due to an external agent or cause as a result of hostile action. Note: The term encompasses all kinds of wounds and other injuries incurred in action, whether there is a piercing of the body, as in a penetrating or perforated wound, or none, as in the contused wound; all fractures, burns, blast concussions, all effects of biological and chemical warfare agents, the effects of exposure to ionizing radiation or any other destructive weapon or agent. [5, 12]

WIA (1<sup>+</sup>): An individual manifesting signs and/or symptoms of Severity Level 1 or greater is considered WIA. [12]

WIA (2<sup>+</sup>): An individual manifesting signs and/or symptoms of Severity Level 2 or greater is considered WIA. [12]

WIA (3<sup>+</sup>): An individual manifesting signs and/or symptoms of Severity Level 3 or greater is considered WIA. [12]

ZOONOSIS: A disease communicable from lower animals to man. (Not NATO Agreed, 1 Jul 2006) [1, 16]





## Appendix B. Comprehensive List of Abbreviations from NATO CBRN Publications Reviewed

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This appendix is a comprehensive lexicon of the abbreviations found in the most current NATO CBRN doctrines that were reviewed and analyzed. For those abbreviations and full forms that are NATO Agreed based on the information provided from NTMS and NATOTerm, an \* will be noted at the beginning of the entry, as well as the date it received that status at the end of the entry. Numbers in brackets [#] at the end of each entry will be provided to indicate the reference(s) that used and defined the specific terminology. Only publication that provided a defined full form to the abbreviation are noted in the brackets; publications that simply used the abbreviation but did not define it are not noted.

### References

- [1] NATO Terminology Management System (NTMS)
- [2] NATOTerm Database
- [3] NATO, *AAP-15: NATO Glossary of Abbreviations Used in NATO Documents and Publications*. AAP-06(2015). Brussels, Belgium: NATO, 2015.
- [4] NATO, *AJP-4.10(B): Allied Joint Medical Support Doctrine*. STANAG 2228. Brussels, Belgium: NATO, May 2015)
- [5] NATO, *AJMedP-7: Allied Joint Medical Doctrine for Support of Chemical, Biological, Radiological and Nuclear (CBRN) Defence Operations*. STANAG 2596. Brussels, Belgium: NATO, August 2015.
- [6] NATO, *Study Draft 4 of AMedP-7.1: Medical Management of CBRN Casualties*. STANAG 2461. Brussels, Belgium: NATO, 2015.
- [7] NATO, *AMedP-7.3: Training of Medical Personnel for CBRN Defence*. STANAG 2954. Brussels, Belgium: NATO, March 2015.
- [8] NATO, *AMedP-7.4: Regulations for Establishment and Employment of MRIIT (Medical Radiological Incident Investigation Teams)*. STANAG 2551. Brussels, Belgium: NATO, November 2013.
- [9] NATO, *Study Draft 3 of AMedP-7.5: NATO Planning Guide for the Estimation of CBRN Casualties*. STANAG 2553. Brussels, Belgium: NATO, December 2015.

[10] NATO, *Study Draft 2 of AMedP-7.6: Commander's Guide to Medical Operations in Support of CBRN Defensive Operations*. STANAG 2873. Brussels, Belgium: NATO, June 2016)

[11] NATO, *Study Draft 3 of AJP-3.8(B): Allied Joint Doctrine for CBRN Defence*. STANAG 2451. Brussels, Belgium: NATO, 2015.

[12] NATO, *AEP-45: Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents (Reference Manual)*. STANAG 2497. Brussels, Belgium: NATO, January 8, 2015.

[13] NATO, *AEP-66: NATO Handbook for Sampling and Identification of Biological, Chemical, and Radiological Agents (SIBCRA)*. STANAG 4701. Brussels, Belgium: NATO, April 15, 2015.

[14] NATO, *AEP-72: Recommended Chemical, Biological and TIC Challenge Levels*. STANREC 4726. Brussels, Belgium: NATO, September 1, 2014.

[15] NATO, *ATP-45: Warning and Reporting and Hazard Prediction of Chemical, Biological, Radiological and Nuclear Incidents (Operator Manual)*. STANAG 2103. Brussels, Belgium: NATO, January 23, 2014.

## **Abbreviations**

2-PAM: Pralidoxime [6]

4-DMAP: 4-Dimethylaminophenol Hydrochloride [6]

5-HT: Serotonin [6]

\*A: (1) Army (NATO Agreed, 25 Jan, 2010) [1, 2, 3]; (2) Search Area (NATO Agreed, 19 Jun 1996) [1, 2, 3]; (3) Air sampler [15]

\*AAP: Allied administrative publication (NATO Agreed, 25 Jun 2013) [1, 2, 3, 9, 13]

\*AAR: (1) After action report (NATO Agreed, 11 Jun 2003) [1, 2, 3, 7]; (2) After action review (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Air-to-air refueling (NATO Agreed, 25 Jun 2013) [1, 2]

\*ABD: (1) Airborne division (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Automated Biological Detector [15]

\*AC: (1) Air coordination (NATO Agreed, 11 Feb 2014) [1, 2, 3]; (2) Airspace control (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Area commander (NATO Agreed, 25 Mar 2009) [1, 2, 3]; (4) Army corps (NATO Agreed, 25 Mar 2009) [1, 2, 3]; (5) Aircraft (NATO Agreed, 26 Aug 2009) [2, 3]; (6) Antichar [3]; (7) Hydrogen cyanide [6, 9, 15]

\*ACC: (1) Air combat command (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (2) Air command centre (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Area control centre (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (4) Air control centre (NATO Agreed, 25 Jun 2013) [1, 2, 3]; (5) Air coordination centre (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (6) Alternate control centre (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (7) Approach control centre (NATO Agreed, 25 Mar 2009) [1, 2, 3]; (8) Area control centre (NATO Agreed, 1 Dec 2004) [1, 2, 3, 12, 15]; (9) Area coordination centre (NATO Agreed, 1 Dec 2004) [1, 3]; (10) Automatic code changing (NATO Agreed, 9 Oct 2002) [1, 2, 3]; (11) Air component commander (NATO Agreed, 1 Dec 2004) [2]

ACD: Automated chemical detector [15]

Ach: Acetylcholine [6]

ACH: Air changes per hour [9]

AChEase: Acetylcholinesterase [6]

\*ACO: (1) Allied Command Operations (NATO Agreed, 9 Dec 2003) [1, 3, 4, 6, 12]; (2) Airspace control order (NATO Agreed, 11 Feb 2014) [1, 2, 3]; (3) airspace coordination order (NATO Agreed, 16 Feb 2000) [1, 2, 3]

ACPL: Agent containing particles per litre [15]

\*ACT: Allied Command Transformation (NATO Agreed, 15 Sept 2003) [1, 2, 3, 4]

ADMA: Atmospheric dispersion modelling automation [14]

\*ADP: Automatic data processing (NATO Agreed, 25 Mar 2009) [1, 2, 3, 12, 15]

\*AE: (1) Aeromedical evacuation (NATO Agreed, 2 Mar 2009) [2, 3, 4, 6], (Deleted, 2 Mar 2009) [1]; (2) Architecture and engineering (NATO Agreed, 14 Nov 2007) [1, 2]

AED: Atomic emission detection [13]

\*AEP: Allied engineering publication (NATO Agreed, 10 Jul 2014) [1, 2, 3, 10, 13, 14, 15]

AEROMEDEVAC: Aeromedical evacuation [3, 8]

\*AEW&CS: Airborne early warning and control system (NATO Agreed, 16 Jun 2008) [1, 2, 3, 12]

AFLT: Aflatoxins [12, 15]

AFRRI: (US) Armed Forces Radiobiology Research Institute [6]

\*AGCF: Air-ground correlation factor (NATO Agreed, 1 Apr 2015) [1, 2, 15]

\*AHP: (1) Allied Hydrographic Publication (NATO Agreed, 10 Jul 2014) [1, 2, 3]; (2) Allied healthcare professionals [7]

\*AIR: (1) Area of intelligence responsibility (NATO Agreed, 1 Mar 1982) [1, 2, 3]; (2) Annual infrastructure report (NATO Agreed, 11 Jun 2003) [2, 3]; (3) Aircraft [12, 15]

AJMedP: Allied Joint Medical Publication [5, 6, 10]

\*AJP: Allied Joint Publication (NATO Agreed, 25 Mar 2009) [1, 2, 3, 4, 9, 11, 13]

\*ALARA: As low as reasonably achievable (NATO Agreed, 14 Dec 2015) [2, 12, 13, 15] (Not NATO Agreed, 1 Jul 2006 in [1])

ALI: Acute lung injury [6]

\*ALSS: Advanced logistics support site (NATO Agreed, 11 Jun 2003) [1, 3, 4]

AM241: Americium [15]

AMBE: Americium/Berillium [15]

\*AMC: (1) ACO Meteorological and Oceanographic Conference (NATO Agreed, 16 Jun 2008) [1, 2, 3]; (2) Airborne mission commander (NATO Agreed, 16 Jun 2008) [1, 2, 3]; (3) Air mission commander (NATO Agreed, 5 Aug 2003) [1, 2, 3]; (4) Air mission control (NATO Agreed, 19 Jun 1996) [1, 2, 3]; (5) Advanced medical care [6]

\*AMedP: Allied Medical Publication (NATO Agreed, 10 Jul 2014) [1, 2, 3, 4, 5, 6, 9, 10, 13, 15]

AN: Alpha-numerical [15]

ANS: Alphabetic numeric special characters [15]

ANTB: Bacillus anthracis [12, 15]

\*AOO: Area of operations (NATO Agreed, 11 Jun 2003) [1, 2, 3, 4]

\*AOR: Area of responsibility (NATO Agreed, 2 Oct 1995) [1, 2, 3, 4, 12]

\*AP: (1) Allied publication (NATO Agreed, 20 May 2005) [1, 2, 3, 5, 6, 7]; (2) Accredited personnel (NATO Agreed, 20 Jan 1995) [1, 2, 3]; (3) Advisory panel on administration (NATO Agreed, 25 Jan 1999) [1, 2, 3]; (4) anti-personnel (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (5) Armour-piercing (projectile) (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (6) Assumed position (NATO Agreed, 24 Jan 1995) [1, 2, 3]; (7) Activation products [13]

\*APF: (1) Advance planning funds (NATO Agreed, 19 Jun 1996) [1, 2, 3]; (2) Aggregate protection factor [12]

\*APOD: (1) Airport of debarkation (NATO Agreed, 25 Jan 2010) [1, 2, 3]; (2) Airport of disembarkation (NATO Agreed, 25 Jan 2010) [1, 2, 3, 4]

\*APOE: Airport of embarkation (NATO Agreed, 1 Apr 2015) [1, 2, 3, 4]

ARD: Automated radiation detector [15]

ARDD: Activated radiological dispersion device [12, 15]

ARDS: Adult Respiratory Distress Syndrome [6]

ARS: Acute Radiation Syndrome [6]

\*ASU: (1) Antenna switch unit (NATO Agreed, 9 Oct 2002) [1, 2, 3]; (2) Aeromedical staging unit [4]

\*ATI: (1) Air target identification (NATO Agreed, 1 Jan 2006) [1, 2, 3]; (2) Air Transportable isolator [6]

atm: Standard atmosphere [9]

\*ATP: Allied Tactical Publication (NATO Agreed, 25 Mar 2009) [1, 2, 3, 10, 11, 13, 14, 15]

\*BA: (1) Breathing apparatus (NATO Agreed, 16 Jun 2008) [1, 2, 3]; (2) Biological agent [6]

\*BAC: (1) Bilateral agreement conference (NATO Agreed, 24 Feb 1995) [1, 2, 3]; (2) Bacterial [15]

BACK: Background [15]

BAL: British Anti-Lewisite [6]

BARE: Bare [15]

BAT: Biodosimetry Assessment Tool [6]

\*BC: (1) Battle casualty (NATO Agreed, 5 Jun 2003) [1, 2, 3, 4]; (2) Budget committee (NATO Agreed, 11 Feb 2014) [1, 2, 3]; (3) Bar code (NATO Agreed, 4 Nov 2009) [1, 2]

BChEase: Butyrylcholinesterase [6]

BD: Buffer distance [15]

BDO: Battle dress overgarment [9]

\*BDU: Battledress uniform (NATO Agreed, 11 Jun 2003) [1, 2, 3, 9]

\*BIDS: (1) Biological integrated detection system (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (2) Biological identification and detection system [15]

BIO: Biological [12, 15]

BIOCHEM: Biological and chemical report [15]

\*Bi-SC: of the two Strategic Commands (NATO Agreed, 11 Jun 2003) [1, 2, 4]

BL: Blister agent [12, 15]

BLOD: Blood agent [12, 15]

BML: Bomblet [15]

BMP: Bulk missile payload [12, 15]

\*Bn: Battalion (NATO Agreed, 25 Mar 2009) [1, 3, 13]

\*BOM: (1) Bill of material (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Bomb [12, 15]

BOT: Cloud bomb [12, 15]

BOTT: Botulinum toxins [12, 15]

\*BP: (1) Battle position (NATO Agreed, 25 Mar 2009) [1, 2, 3]; (2) Border police (NATO Agreed, 1 Jan 2006) [1, 2, 3]; (3) Business process (NATO Agreed, 1 Jan 2006) [1, 2, 3]; (4) Blood pressure [6]

Bq: Becquerel [6, 13]

BQM2: Becquerel per square metre [15]

BQM3: Becquerel per cubic metre [15]

BQS: Becquerel [15]

BRUB: Brucella spp [12, 15]

\*BSA: (1) Brigade support area (NATO Agreed, 24 Feb 1995) [1, 2, 3]; (2) Body surface area [6]

BSDS: Biological stand-off detection system [15]

BSL: Bio-safety level [6]

BTL: Pressurized gas bottle [12, 15]

\*BTWC: Biological and toxin weapons convention (NATO Agreed, 18 Sep 1997) [1, 2, 3, 13]

BUK: Bunker [12, 15]

BUMB: Burkholderia mallei [12, 15]

BUPB: Burkholderia psuedomallei [12, 15]

\*BW: (1) Biological warfare (NATO Agreed, 25 Jun 2013) [1, 2, 3]; (2) Biological weapon [10, 13]

BWA: Biological warfare agent [6]

BWF: Basic wind forecast [12, 15]

BWM: Basic wind data message [12, 15]

BWR: Basic wind report [12, 15]

BZ: 3-Quinuclidinyl benzilate [6, 12, 15]

BZA: Breathing zone air [13]

C: (1) Chemical incident [15]; (2) Celsius/Centigrade [15]; (3) Conditional [15]; (4) Chemical [13]

\*C2: Command and control (NATO Agreed, 1 Jan 2004) [1, 2, 3, 4, 5, 10]

\*C3: Consultation, Command and Control (NATO Agreed, 18 Nov 1997) [1, 2, 3, 4]

C4I: Command, control, communication, computer and intelligence [6, 15]

C4ISR: Command, control, communication, computer, intelligence, surveillance and reconnaissance [12]

CABC: Catastrophic haemorrhage, Airway, Breathing and Circulation [6]

\*CAD: (1) Canadian dollar (NATO Agreed, 23 Mar 1995) [1, 2, 3]; (2) Computer-aided design (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Collisionally activated dissociation [13]

CAL: calorie [9]

\*CAM: (1) Chemical agent monitor (NATO Agreed, 11 Jun 2003) [1, 2, 3, 13, 15]; (2) Computer-aided manufacturing (NATO Agreed, 11 Jun 2003) [1, 2, 3]

CAN: Cannon [12, 15]

\*CAS: (1) Close air support (NATO Agreed, 11 Feb 2014) [1, 2, 3]; (2) Controlled access system (TAA, 1 Aug 2003) [1]; (3) Chemical abstracts service [15]

\*CASEVAC: Casualty evacuation (NATO Agreed, 18 Jun 1996) [1, 2, 3, 6]

\*CAT: (1) Container anchorage terminal (NATO Agreed, 22 Jan 2010) [1, 2, 3]; (2) Countering asymmetric threats (NATO Agreed, 17 Dec 2012) [1, 2, 3]; (3) Casualty category [9]

\*CB: (1) Counter-battery (NATO Agreed, 16 Feb 2001) [1, 2, 3]; (2) Cloud bottom [15]

\*CBC: (1) Civil Budget Committee (NATO Agreed, 11 Feb 2014) [1, 2]; (2) Cross-border connection (NATO Agreed, 26 Nov 1996) [1, 2, 3]; (3) Complete (peripheral) blood count [6]

\*CBRN: Chemical, biological radiological and nuclear (NATO Agreed, 25 Jan 2010) [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15]

CBRN 1: Observers report [12, 15]

CBRN 2: Report for passing evaluated CBRN 1 Reports [12, 15]

CBRN 3: Report for immediate warning of predicted contamination and hazard areas [12, 15]

CBRN 4: Report for reporting detection data and passing monitoring and survey results [12, 15]

CBRN 5: Report for passing information on areas of actual contamination [12, 15]

CBRN 6: Report for passing detailed information on CBRN incidents [12, 15]

\*CBRN ACC: Chemical, biological, radiological and nuclear Area Control Centre (NATO Agreed, 25 Jan 2010) [1, 2, 3, 12, 15]

CBRN BWF: Chemical, biological, radiological and nuclear Basic Wind Forecast [12, 15]

CBRN BWM: Chemical, biological, radiological and nuclear Basic Wind Message [12, 15]

CBRN BWR: Chemical, biological, radiological and nuclear Basic Wind Report [12, 15]

\*CBRN CC: Chemical, biological, radiological and nuclear Control Centre (NATO Agreed, 25 Jan 2010) [1, 2, 3, 12, 15]



CBRN CDF: Chemical, biological, radiological and nuclear Chemical Downwind Forecast [12, 15]

CBRN CDM: Chemical, biological, radiological and nuclear Chemical Downwind Message [12, 15]

CBRN CDR: Chemical, biological, radiological and nuclear Chemical Downwind Report [12, 15]

CBRN EDF: Chemical, biological, radiological and nuclear Effective Downwind Forecast [12, 15]

CBRN EDM: Chemical, biological, radiological and nuclear Effective Downwind Message [12, 15]

CBRN EDR: Chemical, biological, radiological and nuclear Effective Downwind Report [12, 15]

CBRN INFO: Chemical, biological, radiological and nuclear Information for CBRN 1-6, MIR and HAZWARN reports [12, 15]

CBRN RWC: Chemical, biological, radiological and nuclear Reporting and Warning Centre [12, 15]

\*CBRN SCC: Chemical, biological, radiological and nuclear Subcollection Centre (NATO Agreed, 25 Jan 2010) [1, 2, 3, 12, 15]

CBRN SITREP: Chemical, biological, radiological and nuclear Situation Report [12, 15]

CBRN WRC: Chemical, biological, radiological and nuclear Warning and Reporting Centre [12, 15]

\*CBRN ZCC: Chemical, biological, radiological and nuclear Zone Control Centre (NATO Agreed, 25 Jan 2010) [1, 2, 3, 12, 15]

CBUB: *Coxiella burnetti* [12, 15]

\*CC: (1) Contact country (NATO Agreed, 7 Feb 2011) [1, 3]; (2) Component command (NATO Agreed, 25 Jan 2010) [1, 2, 3, 4]; (3) Component commander (NATO Agreed, 1 Feb 2008) [1, 2, 3]; (4) Combatant command(er) (NATO Agreed, 5 Jul 2003) [1, 2, 3]; (5) Compression chamber (NATO Agreed, 16 Jun 1999) [1, 2, 3]; (6) Cash credit (NATO Agreed, 27 Feb 1995) [1, 2, 3]; (7) Collection centre [12, 15]

\*CCA: (1) Carrier-controlled approach (NATO Agreed, 27 Feb 1995) [1, 2, 3]; (2) Close-combat attack (NATO Agreed, 25 Jan 2010) [1, 2, 3]; (3) Contamination control area (NATO Agreed, 11 Jun 2003) [1, 2, 3, 13]

CCAST: Critical Care Air Support Team [6]

CCHV: Crimean-Congo hemorrhagic fever virus [12, 15]

CCP: (1) Casualty Collection Point [4]; (2) Civil contingency plan [3]; (3) Configuration change proposal [3]

CDA: Casualty Decontamination Area [6]

CDC: (1) Casualty Decontamination Centre [6]; (2) (United States) Centre for Disease Prevention and Control [6, 10]

CDG: Commander's dose guidance [13]

CDF: Chemical Downwind Forecast [12, 15]

\*CDL: (1) Common data link (NATO Agreed, 1 Jan 2006) [1, 1, 3]; (2) Clean dirty line [6]

CDM: Chemical Downwind Message [12, 15]

\*CDR: (1) Critical design review (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (2) Commander (Deleted, 1 Jan 2006) [1, 2, 10]; (3) Chemical Downwind Report [12, 15]

CDU: Casualty Decontamination Unit [6]

\*CE: (1) Combat engineers (NATO Agreed, 18 Mar 1998) [1, 2, 3]; (2) Crisis establishment (NATO Agreed, 18 Feb 2015) [1, 2, 3]; (3) Capillary electrophoresis [13]

\*CF: (1) Coalition force (NATO Agreed, 16 Jun 2008) [1, 2, 3]; (2) Counterforce (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Complement fixation [13]; (4) Correlation factor [15]

CF252: Californium [15]

cfm: cubic feet per minute [13]

CFU: Colony forming unit [9]

CFUM2: Colony forming unit per square metre [15]

CFUML: Colony forming unit per millilitre [15]

\*CG: (1) Centre of gravity (NATO Agreed, 14 Nov 1996) [1, 2, 3]; (2) Contact group (NATO Agreed, 9 Oct 2002) [1, 2, 3]; (3) Phosgene [6, 9, 12, 15]

CGH: Centigray per hour [15]

cGy: Centigray [6, 8, 15]

CHEM: Chemical [15]

CHOK: Choking agent [12, 15]

Ci: Curie [6, 9]

\*CIC: (1) Combat information centre (NATO Agreed, 10 Jul 2014) [1, 2, 3]; (2) Combined intelligence centre (NATO Agreed, 27 Feb 1995) [1, 2, 3]; (3) Civilian Intelligence Committee (NATO Agreed, 20 Nov 2014) [1, 2, 3]; (4) Chemical, biological, radiological, and nuclear Incident Cycle [6]

CIM: Critical Incident Management [4]

\*CIMIC: Civil-military cooperation (NATO Agreed, 11 Jun 2003) [1, 2, 3, 4, 6, 11, 12]

\*CIS: (1) Commonwealth of independent states (NATO Agreed, 1 Feb 2007) [1, 2, 3]; (2) Communication and information systems (NATO Agreed, 24 Feb 1995) [1, 2, 3, 4, 10, 12]

CJFC: Combined Joint Force Commander [10]

CJMED: Combined Joint Medical Branch [4]

\*CJOA: (1) Coalition joint operations area (NATO Agreed, 1 Dec 2004) [1, 3]; (2) Combined joint operations area [10]

CJOC: Combined Joint Operations Centre [4]

CK: Cyanogen chloride [6, 9, 12, 15]

\*CL: (1) Combat load (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Confidence level (NATO Agreed, 26 Jan 1999) [1, 2, 3]; (3) Confrontation line (NATO Agreed, 18 Mar 1998) [1, 2, 3]; (4) Coordination level (NATO Agreed, 14 Nov 1996) [1, 2, 3]; (5) Chlorine [6]

Cl<sub>2</sub>: Chlorine [12]

CL36: Chlorine [15]

CLA: Chlamydia [15]

CLOUD: Visible cloud [15]

CLPT: Clostridium Perfringens toxins [12, 15]

\*CM: (1) Configuration management (NATO Agreed, 11 Feb 2014) [1, 2, 3]; (2) Consequence management (NATO Agreed, 5 Jul 2003) [1, 2, 3, 4, 11, 15]; (3) Countermeasure (NATO Agreed, 5 Jul 2003) [1, 2, 3]; (4) Crisis management (NATO Agreed, 31 Jul 2013) [1, 2, 3]; (5) Cruise missile (NATO Agreed, 11 Feb 2014) [1, 2, 3]; (6) Centimetre [13]

CM244: Curium [15]

CM3: Cubic Centimetre [15]

CMP: (1) Configuration management plan (Deleted, 1 Feb 2007) [1]; (2) Canister missile payload [12, 15]

\*CN: (1) Contributing nation (NATO Agreed, 5 Jun 2003) [1, 2, 3]; (2) Chloracetophenone [6]

CNS: Central Nervous System [6]

\*CO: (1) Commanding officer (NATO Agreed, 16 Jun 2008) [1, 2, 3]; (2) Carbon monoxide [6]

Co-60: Cobalt-60 [15]

\*COA: Course of action (NATO Agreed, 25 Mar 2009) [1, 2, 3, 4, 6, 10, 11, 12]

\*COC: (1) Certificate of conformance (NATO Agreed, 18 Nov 1996) [1, 2, 3]; (2) Change of command (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Combat operations centre (NATO Agreed, 11 Feb 2014) [1, 2, 3]; (4) Committee of contributors (NATO Agreed, 1 Jan 2006) [1, 2, 3]; (5) Chain of custody [13]

\*COLPRO: (1) Collective chemical, biological, radiological and nuclear protection (NATO Agreed, 26 Aug 2009) [1, 3]; (2) Chemical, biological, radiological and nuclear collective protection (NATO Agreed, 14 Dec 2015) [2]; (3) Collective protection [5, 6, 9, 10, 11]

\*COMAJF: Commander Allied Joint Force (NATO Agreed, 27 Feb 1995) [1, 2, 3, 5]

\*COMEDS: Committee of the Chiefs of Military Medical Services in NATO (NATO Agreed, 22 Dec 1997) [1, 2, 3, 4]

CON: Generic Storage Container [15]

\*CONOPS: Concept of operations (NATO Agreed, 20 Jan 2012) [1, 2, 3, 4]

CONF: Confirmed Identification [15]

CONFORMATS: Concept of FORMETS [12]

CONT: Continuous [15]

CONV: Convalescent [9]

CPAP: Continuous Positive Airway Pressure [6]

CPDS: Chemical Prediction Data Sheet [15]

\*CPE: (1) Collective protection equipment (NATO Agreed, 21 Jun 1999) [1, 2, 3]; (2) Contact point embassy (NATO Agreed, 10 Feb 2003) [1, 2, 3]; (3) Casualty protective equipment [6, 10]; (4) Cytopathic effects [13]

Cpm: Counts per minute [13]

CPOE: Comprehensive preparation of the operational environment [11]

CRATER: Crater Present [15]

CRESS: Consciousness, Respirations, Eyes, Secretions and Skin (Assessment) [6]

CRN: Chemical, radiological, and nuclear [9]

\*CRO: Crisis response operation (NATO Agreed, 11 Jun 2003) [1, 2, 3, 4]

\*CRP: (1) Committee of Staff Representatives (NATO Agreed, 21 Jun 1999) [1]; (2) Control and reporting post (NATO Agreed, 10 July 2014) [1, 2, 3]; (3) C-Reactive protein [6]

\*CS: (1) Close support (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (2) Combat support (NATO Agreed, 28 Feb 1995) [1, 2, 3]; (3) Committee of Standardization (NATO Agreed, 18 Nov 2011) [1, 2, 3]; (4) Counter-surprise (NATO Agreed, 25 Nov 2003) [1, 2, 3]; (5) Orthochlorobenzylidene Malononitrile (Tear Gas) [6]

Cs-137: Cesium-137 [12, 15]

\*CSF: (1) Central supply facility (NATO Agreed, 28 Feb 1995) [1, 2, 3]; (2) Combined strike force (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (3) Cerebral Spinal Fluid [6]

\*CSG: (1) Civil sealift group (Deleted, 10 Jul 2014) [1, 2]; (2) Course and speed made good over the ground (NATO Agreed, 28 Feb 1995) [1, 2, 3]; (3) Challenge Sub Group [12, 15]

\*CSH: (1) Combat support helicopter (NATO Agreed, 28 Feb 1995) [1, 2, 3]; (2) Centisievert per Hour [15]

\*CSU: (1) Computer software unit (Not NATO Agreed, 1 Feb 2007) [1]; (2) Casualty staging unit (NATO Agreed, 11 Aug 2005) [1, 2, 3, 4]; (3) CIMIC support unit (NATO Agreed, 16 Jun 2008) [1, 2, 3]

CSV: Centisievert [15]

Ct: Concentration Time [6, 9]

\*CT: (1) Counterterrorism (NATO Agreed, 31 Jan 2014) [1, 2, 3, 6]; (2) Consignment tracking (NATO Agreed, 11 Jun 2003) [2, 3]; (3) Computed Tomography [4, 6]

\*CW: (1) Chemical warfare (NATO Agreed, 28 Feb 1995) [1, 2, 3]; (2) Chemical weapon (NATO Agreed, 11 Jun 2003) [1, 2, 3, 5, 6, 13]; (3) Continuous wave (NATO Agreed, 11 Jun 2003) [1, 2, 3]

\*CWC: (1) Chemical Weapon Convention (NATO Agreed, 11 Jun 2003) [1, 2, 3, 5, 6, 13]; (2) Composite warfare commander (NATO Agreed, 28 Feb 1995) [1, 2, 3]

CX: Phosgene oxime [6]

CXR: Chest x-ray (radiograph) [6]

\*DA: (1) Damage assessment (NATO Agreed, 25 Feb 1995) [1, 2, 3]; (2) Direct action (NATO Agreed, 18 Feb 2015) [1, 2, 3]; (3) Diphenylchlorarsine [6]; (4) Total downwind distance of the center of the BIO cloud in km [15]

\*DAT: Defence against terrorism (NATO Agreed, 1 Jan 2006) [1, 2, 3, 6, 10]

DAY: Day [6, 9, 15]

\*DC: (1) Democratic Centre (NATO Agreed, 9 Oct 2002) [1, 2, 3]; (2) Disarmament commission (NATO Agreed, 28 Feb 1995) [1, 2, 3]; (3) Diphenylcyanarsine [6]

\*DCS: Damage control surgery (NATO Agreed, 9 Jul 2012) [1, 2, 4]

\*DE: (1) Damage expectancy (Deleted, 25 Jan 2010) [1, 2]; (2) Directed energy (NATO Agreed, 1 Jun 2003) [1, 2, 3]; (3) Extended distance in km [15]

DECR: Decreasing [15]

DEF: Definitive [15]

Deg: Degrees [15]

DEPU: Depleted uranium [15]

DET: (1) Other automated detector [15]; (2) Detected [15]

DEV: Device [12, 15]

\*DF: (1) Defensive fire (NATO Agreed, 18 Nov 1996) [1, 2, 3]; (2) Direction finding (NATO Agreed, 11 Feb 2014) [1, 3]; (3) Deployable forces (NATO Agreed, 17 Dec 2012) [1, 3]; (4) Direct fire (NATO Agreed, 1 Mar 1973) [2]; (5) Decays faster than normal [15]

DFOA: Deferoxamine (Desferrioxamine) [6]

DGA: Direction Générale De L'Armement [14]

DGG: Degrees/Grid North [12, 15]

\*DGM: (1) Deputy general manager (NATO Agreed, 16 Nov 1996) [1, 2, 3]; (2) Degrees/Magnetic North [15]

DGT: Degrees/True North [12, 15]

\*DGZ: Desired ground zero (NATO Agreed, 28 Feb 1995) [1, 2, 15]

DHD: Downwind hazard area distance [12, 15]

DHSC: Deployment Health Surveillance Centre [5, 10]

DIC: Disseminated Intravascular Coagulopathy [6]

DIM: Detection, identification, and monitoring [11]

DIM SG: Detection, Identification, and Monitoring Sub Group [13]

\*DL: (1) Data link (NATO Agreed, 1 Feb 2007) [1, 2, 3]; (2) Demarcation line (Deleted, 11 Feb 2014) [1, 2]; (3) Leading edge distance in km [12, 15]; (4) Deployed laboratory [15]

\*DM: (1) Deployability and mobility (NATO Agreed, 1 Feb 2007) [1, 2, 3]; (2) Diphenylaminochlorarsine (Adamsite) [6]

DMSA: Dimercaptosuccinic Acid (Succimer) [6]

DN: Decay Normal [15]

DNA: Deoxyribose Nucleic Acid [6]

\*DNBI: Disease and non-battle injury (NATO Agreed, 11 Jun 2003) [1, 2, 3, 4]

DNSA: Director NATO Standardization Agency [14]

\*DOB: (1) Deployment operation base (NATO Agreed, 1 Sep 1975) [2]; (2) Deployed operating base (NATO Agreed, 1 Jan 2006) [1, 2, 3, 4]; (3) Depth of burst (NATO Agreed, 28 Feb 1995) [1, 2, 3]; (3) Dispersal operating base (NATO Agreed, 11 Jun 2003) [1, 2, 3]

DOW: Died of wounds [9]

\*DP: (1) Data processing (NATO Agreed, 25 Mar 2009) [1, 2, 3]; (2) Distribution point (NATO Agreed, 28 Feb 1995) [1, 2, 3]; (3) Design pressure (Not NATO Agreed, 1 Oct 2006) [1]; (4) Di-Phosgene [6, 12, 15]

\*DPC: (1) Defence Planning Committee (NATO Agreed, 28 Feb 1995) [1, 2, 3]; (2) Damaged Package and Contamination [12, 15]

\*DPRE: Displaced persons and refugees (NATO Agreed, 11 Jun 2003) [1, 2, 3, 6]

\*DR: (1) Dead reckoning (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (2) Dose rate (NATO Agreed, 28 Feb 1995) [1, 2, 3]; (3) Disaster relief [4]

DRM: Nominal Storage Drum (55 Gallons/200 litres) [12, 15]

\*DS: (1) Democratic Party (NATO Agreed, 25 Jan 2010) [1] (Cancelled, 25 Jan 2010) [2]; (2) Decision sheet (NATO Agreed, 10 Jul 2014) [1, 2, 3]; (3) Declared site (NATO Agreed, 1 Dec 2004) [2, 3]; (4) Direct support (NATO Agreed, 22 Jun 2004) [2, 3]; (5) Decay slower than normal [15]

\*DTG: Date-time group (NATO Agreed, 28 Feb 1995) [1, 2, 3, 13]

DTPA: Diethylene Triamine Pentaacetic Acid [6, 8]

DTRA: USA Defence Threat Reduction Agency [13, 14]

\*DU: Depleted uranium (NATO Agreed, 20 Feb 2003) [1, 2, 3, 6, 13]

\*E3: Electromagnetic environmental effects (NATO Agreed, 26 Jan 1999) [1, 2, 3, 12]

\*EAPC: Euro-Atlantic Partnership Council (NATO Agreed, 21 Jul 1998) [1, 2, 3, 11]

EBOV: Ebola virus [12, 15]

ECG: Electrocardiogram [6]

ECt50: Effective median dosage (concentration time) [9]

ED50: (1) Effective Dose 50 [6]; (2) Median effective dose [9]

EDF: Effective Downwind Forecast [12, 15]

EDM: Effective Downwind Message [12, 15]

EDR: Effective Downwind Report [12, 15]

EDTA: Ethylenediamine-N,N,N',N'-tetraacetic acid (Edetic Acid) [6, 8]

\*EDW: Effective downwind (NATO Agreed, 11 Jun 2003) [1, 2, 3, 12, 15]

\*EE: (1) Effective engagement (NATO Agreed, 16 Jun 2008) [1, 2, 3]; (2) Emergency establishment (NATO Agreed, 8 Aug 2008) [1, 2, 3]; (3) Estimated location [15]

EEEV: (1) Eastern equine encephalitis virus [9]; (2) Eastern equine encephalomyelitis virus [12, 15]



EEG: Electro-encephalogram [6]

EIH: Environmental and Industrial Hazards [4, 6, 15]

ELISA: Enzyme-Linked Immunosorbent Assay [6, 13, 15]

\*EMP: Electromagnetic pulse (NATO Agreed, 11 Jun 2003) [1, 2, 3, 6, 10, 12, 15]

EMT: Emergency Medical Treatment [6]

EMTm: Emergency Medical Team [6]

\*EOD: Explosive Ordnance Disposal (NATO Agreed, 30 Jan 2012) [1, 2, 3, 13]

EPD: Electronic Personal Dosimeter [6]

EpiNATO: Deployment Health Surveillance System of NATO [10]

EPR: (1) Engine pressure ratio indicator (Not NATO Agreed, 1 Aug 2004) [1]; (2) Electron Paramagnetic Resonance [6]

ERG: Emergency Response Guide [12, 15]

\*ERW: Enhanced Radiation Weapon (NATO Agreed, 12 Dec 1994) [1, 2, 3, 6]

ESA: Environmental sampling and analysis [13]

ESCB: Escherichia Coli [12, 15]

ESD: (1) Electrostatic discharge (Not NATO Agreed, 1 Oct 2006) [1, 3]; (2) Evidence of Site Disruption [12, 15]

ESI: Electrospray ionization [13]

\*EST: Emergency support team (NATO Agreed, 4 Dec 2004) [1, 2, 3]; (2) Estimated [15]

\*ETA: Estimated time of arrival (NATO Agreed, 16 Jun 2008) [1, 2, 3]; (2) Earliest Time of Arrival [15]

Etbv: European tick borne encephalitis virus [12, 15]

\*EU: European Union (NATO Agreed, 18 Sep 1997) [1, 2, 3, 4]

EVI: Evidential [15]

\*EWS: Emergency water supply (NATO Agreed, 16 Jun 2008) [1, 2, 3]; (2) Effective Downwind Speed [12, 15]

EXFIRE: Explosions and Fire [12, 15]

EXS: Exposed Source [12, 15]

F: Fahrenheit [15]

FBC: Full (Peripheral) Blood Count [6]

FE: Fuller's Earth [6]

\*FF: (1) Frigate (NATO Agreed, 16 Mar 2000) [1, 2, 3]; (2) Fresh Reactor Fuel [15]

FFF: Fuel Fabrication Facility [15]

FHP: Force Health Protection [5]

FIRE: Burning Fire [15]

\*FL: (1) Flight level (NATO Agreed, 11 Jun 2003) [1, 3] (Cancelled, 8 Aug 2008) [2];  
(2) Nuclear Weapon Fallout [15]

FLAT: Flat Terrain [12, 15]

FLAV: Flaviviruses [12, 15]

\*FM: (1) Force management (NATO Agreed, 25 Jun 1996) [1, 2, 3]; (2) Frequency management (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (3) Frequency modulation (NATO Agreed, 19 Jun 1996) [1, 2, 3]; (4) Titanium Tetraoxide [6]

\*FMS: (1) Flight management system (NATO Agreed, 1 Feb 2007) [1, 2, 3]; (2) Foreign military sales (NATO Agreed, 10 Jul 2014) [1, 2, 3]; (3) Fissile material storage [12, 15]

FNF: Fresh Nuclear Fuel [12, 15]

\*FORMETS: Message text formatting system (NATO Agreed, 10 Jul 2014) [1, 2, 3, 12]

FOX: CBRN Reconnaissance Vehicle [15]

\*FP: (1) Force planning (NATO Agreed, 5 Jul 2003) [1, 2, 3]; (2) Force proposal (NATO Agreed, 28 Feb 1995) [1, 2, 3]; (3) Force protection (NATO Agreed, 20 Feb 2003) [1, 2, 3, 5, 11]; (4) Fission products [6, 13]

FPD: (1) Flame photometric detector [12]; (2) Flame photometric spectrometry [13]

FRC: Functional Residual Capacity [6]

FRF: Fuel Reprocessing Facility [15]

FRTB: Francisella tularensis [12, 15]

\*FS: (1) Field support (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (2) Fire support (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Flight safety (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (4) Force standards (NATO Agreed, 1 Feb 2002) [1, 2, 3]; (5) Functional service (NATO Agreed, 20 Feb 2003) [1, 2, 3]; (6) Sulphur Trioxide-chlorosulphuric Acid [6]

FT: Feet [15]

FT-IR: Fourier-transform infrared spectrometry [13]

G: Nerve G agent [12, 15]

\*GA: (1) General agreement (NATO Agreed, 18 Nov 1996) [1, 2, 3]; (2) General alert (Deleted, 10 Jul 2014) [1, 2]; (2) Ground attack (Deleted, 10 Jul 2014) [1, 2]; (4) Tabun [6, 9, 12, 15]

GB: Sarin [6, 9, 12, 15]

GC: Gas Chromatograph [13, 15]

G-CSF: Granulocyte-colony stimulating factor [9]

GD: Soman [6, 9, 12, 15]

GEN: Generator (Aerosol) [15]

GF: Cyclosarin [6, 9, 12, 15]

GI: Gastrointestinal [6]

GLP: Good Laboratory Practice [13]

\*GMT: Greenwich Mean Time (Deleted, 10 Jul 2014) [1, 2, 15]

GN: Grid North [15]

\*GPS: (1) General-purpose segment (NATO Agreed, 17 Oct 2000) [1, 2, 3]; (2) Global positioning system (NATO Agreed, 10 Jul 2014) [1, 2, 3, 13]; (3) Global protection system (NATO Agreed, 16 Mar 2000) [1, 2, 3]

GSPEC: Gamma Spectrometer [15]

Gy: Gray [6, 9]

\*GZ: Ground zero (NATO Agreed, 31 Oct 2013) [1, 2, 3, 12, 15]

H: Sulphur Mustard [6, 12, 15]

H<sub>2</sub>S: Hydrogen sulfide [9]

\*HA: (1) Holding area (NATO Agreed, 17 Mar 2000) [1, 2, 3]; (2) Humanitarian assistance (NATO Agreed, 1 Dec 2004) [1, 2, 3, 4]

HAI: haemagglutination and haemagglutination inhibition [13]

HANV: Hantaviruses [15]

\*HAZMAT: Hazardous material (NATO Agreed, 30 Jan 2012) [1, 2, 3, 6]

HAZWARN: Hazard Warning [12, 15]

HC: Zinc Oxide Mixtures [6]

HD: (1) Hazard division (Not NATO Agreed, 1 Oct 2006) [1]; (2) Distilled mustard [9, 12, 15]

HEPA: High-efficiency particulate air [13]

\*HF: (1) Height finder (NATO Agreed, 17 Mar 2000) [1, 2, 3]; (2) Hydrofluoric acid [6]

HF-LPME: Hollow fibre liquid phase microextraction [13]

HGMS: Handheld Gamma Survey Monitor [15]

HIGH: High Confidence [15]

HILL: Hill [12, 15]

HL: Mustard-Lewisite [12, 15]

HM: Hectometre (100 metres) [15]

HME: Homemade Explosive [6]

\*HN: (1) Host nation (NATO Agreed, 27 Mar 1995) [1, 2, 3, 4, 5, 11, 12, 13]; (2) Nitrogen mustard [6, 15]

\*HNS: Host nation support (NATO Agreed, 31 Jan 2014) [1, 2, 3, 4, 5]

\*HOB: Height of burst (NATO Agreed, 27 Mar 1995) [1, 2, 3, 15]

\*HP: (1) High pressure (NATO Agreed, 19 Jun 1996) [1, 2, 3]; (2) Health physics [13]

HPAC: Hazard Prediction and Assessment Capability [9, 13, 14]

HPGe: Hyper-pure germanium and intrinsic germanium [13]

HPLC: High performance liquid chromatography [13]

\*HQ: Headquarters (NATO Agreed, 16 May 2012) [1, 2, 3, 4, 12, 15]

\*HR: (1) High-representative (NATO Agreed, 17 Mar 2000) [1, 2, 3]; (2) Hour [9, 15]

HT: Trimeric mustard [12, 15]

\*IAEA: International Atomic Energy Agency (NATO Agreed, 1 Dec 2004) [1, 2, 3, 6, 13]

IAHA: Immune adherence haemagglutination assay [13]

IATA: International Air Transport Association [6]

IAW: In accordance with [13]

IBC: Intermediate Bulk Container [15]

IBDS: Integrated Biological Detector System [15]

\*ICI: Istanbul Cooperation Initiative (NATO Agreed, 25 Jan 2010) [1, 3, 11]

ICPD: Inductively Coupled Plasma Detector [15]

ICP-MS: Inductively coupled plasma mass spectroscopy [13]

\*ICRC: International Committee of the Red Cross (NATO Agreed, 19 Mar 1998) [1, 2, 3, 4]

ICRP: (1) Internal Committee for Radiation Protection [6]; (2) International Commission on Radiation Protection [13]

ICRU: International Commission on Radiation Units and Measures [13]

ICt: Incapacitating dosage [15]

ICt50: (1) Incapacitating Concentration Time 50 [6]; (2) Median Incapacitating Dosage [15]

ICU: Intensive care unit [4]

I123: Iodine [15]

I131: Iodine 131 [15]

\*ID: (1) Infantry division (NATO Agreed, 21 Mar 2000) [1, 2, 3]; (2) Infectious dose [6]; (3) Identification [13]; (4) Inside Dose Rate [15]; (5) Identification [15]

IDXX: Incapacitating Dose [15]

ID50: (1) Incapacitating Dose 50 [6]; (2) Infectious dose 50 [6]; (3) Median infectious dose; dose resulting in infection and illness for 50% of the exposed population [9]

IDA: Institute for Defence Analyses [14]

IDAU: Infectious Disease Assessment Unit [6]

\*IDP: Internally displaced person (NATO Agreed, 4 Oct 2000) [1, 2, 3, 5]

\*IDRO: International Disaster Relief Operation (NATO Agreed, 11 Jun 2003) [1, 2, 3, 4]

\*IED: Improvised explosive device (NATO Agreed, 4 Feb 2011) [1, 2, 3, 6]

\*IEDD: Improvised explosive device disposal (NATO Agreed, 7 Feb 2011) [1, 2, 3, 13]

IF: Immunofluorescence [13]

\*IGO: Intergovernmental organization (NATO Agreed, 1 Dec 2004) [1, 3, 11]

IHR: International Health Regulations [6, 10]

\*IM: Information management (NATO Agreed, 20 Aug 1998) [1, 2, 3, 12]

\*IMS: (1) International Military Staff (NATO Agreed, 10 Jul 2014) [1, 2, 3]; (2) Ion Mobility Spectrometry [13, 15]

INCP: Incapacitating agent [12, 15]

INCR: Increasing [15]

\*IND: (1) Improvised nuclear device (NATO Agreed, 16 Jun 2008) [1, 2, 3, 6, 13]; (2) Indicative [15]

\*INES: (1) International nuclear and radiological event scale (NATO Agreed, 7 Feb 2011) [1, 2, 3]; (2) International Nuclear Event Scale [6]

INFV: Influenza virus [12, 15]

INIT: Initial [15]

INR: International Normalised Ratio [6]

\*INS: (1) Improved NATO Air Defence Ground Environment station (NATO Agreed, 12 Dec 1994) [1, 2, 3]; (2) Inertial navigation system (NATO Agreed, 1 Oct 1980) [1, 2, 3]; (3) Industrial source [12, 15]

\*INT: (1) Intelligence (NATO Agreed, 31 Oct 2013) [1, 2, 3]; (2) Intelligence based [15]; (3) Intact Package or Device [15]

INWAT: Substance spilled into water [15]

\*IO: (1) International Organization (NATO Agreed, 8 Aug 2008) [1, 2, 3, 4, 11]; (2) Interoperability objective (NATO Agreed, 29 May 1998) [1, 2, 3]; (3) Iodine [15]

\*IP: (1) Initial point (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Intercept point [12, 15]

\*IPC: (1) Industrial Planning Committee (NATO Agreed, 20 Aug 1998) [1, 2, 3]; (2) Initial planning conference (NATO Agreed, 11 Feb 2014) [1, 2, 3]; (3) Infection prevention and control [7]

\*IPE: Individual protective equipment (NATO Agreed, 10 Apr 2014) [1, 2, 3, 5, 6, 9, 10, 11, 13, 15]

\*IR: (1) Information requirement (NATO Agree, 7 Feb 2011) [1, 2, 3]; (2) Infrared (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Intelligence request (NATO Agreed, 1 Jan 2006) [1, 2, 3]; (4) Infrared spectrometry [13]; (5) Infrared spectroscope [15]

IR192: Irridium [15]

IRC: Information related capabilities [11]

ISN: Incident Serial Number [12, 15]

\*ISO: International Organization for Standardization (NATO Agreed, 26 Jun 1996) [1, 2, 3, 13]

\*IT: Information technology (NATO Agreed, 27 Jan 1999) [1, 2, 3, 12]

\*JALLC: Joint Analysis and Lessons Learned Centre (NATO Agreed, 13 Jan 1999) [1, 2, 3, 4]

\*JAT: Joint assessment team (NATO Agreed, 16 Jun 2008) [1, 2, 3, 6]

JC: Joint Command [4]

JC3IEDM: Joint Consultation, Command, and Control Information Exchange Data Model [12]

J/cm<sup>2</sup>: joules per square centimeter [9]

JCGCBRN: Joint Capability Group on Chemical, Biological, Radiological and Nuclear [14]

\*JFC: Joint Force Command(er) (NATO Agreed, 15 Oct 2003) [1, 2, 3, 4, 5, 11]

\*JOA: Joint Operations Area (NATO Agreed, 20 Aug 1998) [1, 2, 3, 4, 5, 6, 10, 11, 12, 15]

JOB: Joint Order of Battle [12]

\*JOC: Joint Operation Centre (NATO Agreed, 11 Jun 2003) [1, 2, 3, 4]

\*JPG: Joint Planning Group (NATO Agreed, 11 Jun 2003) [1, 2, 3, 5]

J-Staff: Joint staff [5]

JTF: Joint task force (NATO Agreed, 11 Jun 2003) [1, 2, 3, 4]

JUNV: Junin virus [12, 15]

K40: Potassium [15]

KF: Kilofeet (1000 feet) [15]

Kg: Kilogram [9, 15]

KI: Potassium Iodine or Potassium Iodate [6, 13]

\*KIA: Killed in action (NATO Agreed, 29 Jun 1999) [1, 2, 3, 9]

KJ: Kilojoule [9]

KJ/m<sup>2</sup>: Kilojoule per square meter [9]

KLPs: Key Learning points [7]

km: Kilometre [6, 15]

Km/h: Kilometre per Hour [15]

KNO: Known [12]

kPa: kilopascal [6, 9]

KPH: Knots per hour [6]

KR85: Krypton [15]



KT: Kiloton [12, 15]

KTS: Knots [12, 15]

L: (1) Liquid Sample [15]; (2) Lewisite [6, 12, 15]; (3) Litre [9, 15]

LAPS: Light Addressable Potentiometric Sensor [13]

LAT/LONG: Latitude and Longitude [12, 15]

LASV: Lassa virus [12, 15]

lb: Pounds [9, 15]

LC: Liquid Chromatograph [13, 15]

LCt: Lethal Dosage [15]

LCt50: (1) Lethal Concentration Time 50 [6]; (2) Median Lethal Dosage [15]

LDXX: Lethal Dose [15]

LD50: (1) Lethal Dose 50 [6]; (2) Median lethal dose; dose resulting in lethality for 50% of the exposed population [9, 15]

LEAK: Continuous Flow from Damaged Pipe or Container [12, 15]

LED: Light emitting diode (Not NATO Agreed, 1 Aug 2004) [1, 13]

\*LEGAD: Legal advisor (NATO Agreed, 1 Dec 2004) [1, 2, 3, 6]

LET: Linear Energy Transfer [6]

LG: Land Group [14]

\*LIDAR: (1) Laser identification, detection and ranging (NATO Agreed, 18 Oct 2000) [1, 2, 3]; (2) Light detection and ranging (NATO Agreed, 11 Jun 2003) [1, 2, 3, 13, 15]

LIF: Laser induced fluorescence [13]

LIQ: Liquid Sample [15]

LIQUID: Liquid [12, 15]

LIMS: Laboratory information management system [13]

LISN: Local Incident Serial Number [15]

LLE: Liquid-liquid extraction [13]

\*LLR: Low-level radiation (NATO Agreed, 11 Jun 2003) [1, 2, 3, 13]

LMA: Laryngeal Mask Airway [6]

\*LN: (1) Lead nation (NATO Agreed, 29 Mar 2000) [1, 2, 3, 4]; (2) Local national (NATO Agreed, 1 Dec 2004) [1, 2, 3]

\*LOC: (1) Level of operational capability (NATO Agreed, 26 Jun 1996) [1, 2, 3]; (2) Limited operational capability (NATO Agreed, 30 May 2002) [1, 2, 3]; (3) Lines of communication (NATO Agreed, 12 Dec 1994) [1, 2, 3, 4, 15]

LOW: Low Confidence [15]

Lpm: Liters per minute [13]

LRGBIO: Biological – Large (Greater than 10 kilograms but equal to or less than 100 kilograms) [12, 15]

LRGCHEM: Chemical - Large (Greater than 1500 litres or kilograms but equal to or less than 50000 litres or kilograms) [12, 15]

LRGRAD: Radiological - Large (Fire/Exposed Source) [12, 15]

LSC: Liquid scintillation counting [13]

LSCAD: Lightweight Stand-off Chemical Agent Detector [15]

\*LSD: (1) Landing ship dock (NATO Agreed, 1 Apr 1973) [1, 2, 3]; (2) Logistic support detachment (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) D-lysergic acid diethylamide [6]; (4) Least Separation Distance [15]

\*LSE: (1) Logistic support element (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Liquid solid extraction [13]

LSI: (1) Large scale integration (Not NATO Agreed, 1 Mar 1998) [1]; (2) Life-saving intervention [6]

\*LTA: (1) Local target area (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Latest Time of Arrival [15]

LTN: Long ton [15]

M: (1) Metre [9, 15]; (2) Mandatory [15]; (3) Atomic demolition munitions [15]

m<sup>3</sup>: Cubic Metre [9, 15]

MACRMS: Mortuary Affairs Contaminated Remains Mitigation Site [15]

MACV: Machupo virus [12, 15]

MAG: Medical Advisory Group [6]

MALDI: Matrix-assisted laser desorption/ionization [13]

\*MARV: (1) Maneuverable re-entry vehicle (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Marburg virus [12, 15]

\*MASCAL: Mass casualties (NATO Agreed 5 Jul 2003) [1, 2, 3, 4, 5, 6, 10]

MBq: Megabecquerel [13]

\*MC: (1) Military Committee (NATO Agreed, 11 Feb 2014) [1, 2, 3, 4, 10, 11]; (2) Mission commander (NATO Agreed, 25 Jan 2010) [1, 2]

MCTXX: Eye effecting Dosage xx (Miosis) = MCt1 to MCt99 [15]

\*MD: (1) Mechanized division (NATO Agreed, 18 Sep 1997) [1, 2, 3]; (2) Mediterranean Dialogue (NATO Agreed, 1 Jan 2006) [1, 2, 3, 11]; (3) military deception (NATO Agreed, 1 Jan 2006) [1, 2, 3]; (4) military district (NATO Agreed, 6 Nov 2003) [1, 2, 3]; (5) missile defence (NATO Agreed, 4 Feb 2013) [1, 2]

\*MDA: (1) Main defence area (NATO Agreed, 16 Feb 2001) [1, 2, 3]; (2) Mine danger area (NATO Agreed, 24 Apr 1995) [1, 2, 3]; (3) Multiple docking adapter (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (4) Minimum detectable activity [13]

MDS: Medical Source [12, 15]

\*MED: (1) Medical (NATO Agreed, 20 Aug 1998) [1, 2, 3]; (2) Maritime exercise directive (NATO Agreed, 11 June 2003) [1, 2, 3]; (3) Medium confidence [15]

\*MEDAD: Medical advisor (NATO Agreed, 5 Jul 2003) [1, 2, 3, 4, 6]

\*MEDCC: (1) Medical coordination centre (NATO Agreed, 5 Jul 2003) [1, 3]; (2) Medical Coordination Cell (NATO Agreed, 12 May 2015) [2, 10]

MEDCHEM: Chemical - Medium (Greater than 200 litres or kilograms but equal to or less than 1500 litres or kilograms) [12, 15]

MedCM: Medical Countermeasure [6, 7, 11]

Med Dir: Medical Director [4]

\*MEDEVAC: Medical evacuation (NATO Agreed, 28 Oct 2013) [1, 2, 3, 4, 5, 6, 10]

MEDICS: Medical Information and Coordination System [5, 10]

\*MEDINT: Medical intelligence (NATO Agreed, 31 Oct 2013) [1, 2, 3, 5]

MERWARN: Warning of fallout endangering merchant shipping [12, 15]

MES: Measured [15]

\*Met: Meteorological (NATO Agreed, 20 Mar 2002) [1, 2, 3, 12, 15]

METHANE (CBRN Related): My call sign and frequency; Exact location, time and wind directions; Type of incident; Hazards identified; Assessment; Numbers of casualties and population at risk or exposed; Emergency resources on scene and required [6]

MeV: Million electro Volts [15]

\*MF: (1) Military function (NATO Agreed, 25 Mar 2009) [1, 2, 3]; (2) Multiplication factor [15]

MFR: Memorandum for Record [14]

\*MG: (1) Machine gun (NATO Agreed, 31 mar 2000) [1, 2, 3]; (2) Milligram [6, 9]

mg/kg: Milligram per kilogram [6]

Mg/m<sup>2</sup>: Milligrams per square metre [15]

Mg/m<sup>3</sup>: Milligrams per cubic metre [9, 15]

Mg-min/m<sup>3</sup>: Milligram-minutes per cubic metre [6, 9, 15]

\*MGRS: (1) Military geographic reference (NATO Agreed, 1 Dec 2004) [1, 2, 3, 12, 15]; (2) Military grid reference system (NATO Agreed, 11 Jun 2003) [1, 2, 3]

MGY: Milligray [15]

\*MIL: (1) Main incident list (NATO Agreed, 11 Feb 2014) [1, 2, 3]; (2) Mils [15]

MIN: Minute [9, 15]

\*MIR: (1) Military infrastructure requirement (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Missile Intercept Report [12, 15]

\*ML: (1) Multi-layer (defence) (NATO Agreed, 28 Feb 2003) [1, 2, 3]; (2) Millilitre [15]

MLG: Mils/Grid North [15]

\*MLO: (1) Military Liaison Officer (Moscow) (NATO Agreed, 5 Feb 2002) [1, 2, 3]; (2) Mils/Magnetic North [15]

\*MLRS: Multiple-launch rocket system (NATO Agreed, 12 Dec 1994) [1, 2, 3, 15]

\*MLT: (1) Mean lifetime (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Mils/True North [15]

MM3: Cubic millimeter [15]

\*MMS: (1) Minimum manning strength (NATO Agreed, 20 Nov 1998) [1, 2, 3]; (2) Mass Spectrometer [15]

\*MMU: Mobile meteorological unit (NATO Agreed, 31 Mar 2000) [1, 2, 3]; (2) Multinational medical unit [4]

\*Mn: Multinational (NATO Agreed, 22 Jan 2010) [1, 2, 3, 13]

\*MND: (1) Mission need document (NATO Agreed, 12 Dec 1994) [1, 2, 3, 12]; (2) Multinational division (NATO Agreed, 2 Oct 1995) [1, 2, 3]

MNE: Mine [12, 15]

MO: Medical Officer [6]

MOF: Multiple Organ Failure [6]

MON: Month [15]

MONV: Monkeypox virus [15]

MOPP: Mission oriented protective posture [10]

\*MOR: (1) Military operational requirement (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Mortar [15]

\*MOU: Memorandum of understanding (NATO Agreed, 14 Mar 1995) [1, 2, 3, 4]

MPDS: Manned Point Detection System [12, 15]

MPH: Miles per Hour [6, 15]

MPK: Milligram/70 kg person [15]

\*MPS: (1) Maritime per-positioning ship (NATO Agreed, 7 Feb 2011) [1, 2, 3]; (2) Mission planning system (NATO Agreed, 23 Dec 1997) [1, 2, 3]; (3) Metres per second [12, 15]

MRIIT: Medical Radiological Incident Investigation Team [5, 6, 8, 10]

\*MS: (1) Member state (NATO Agreed, 1 Jan 2006) [1, 3]; (2) Minesweeper (NATO Agreed, 31 Mar 2000) [1, 3]; (3) Military standard (NATO Agreed, 13 Dec 1994) [2]; (4) Mass spectrometry [13, 15]; (4) Manned survey [15]

\*MSA: (1) Minimum safe altitude (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (2) Mutual support Agreement (NATO Agreed, 5 Jul 2003) [1, 2, 3]; (3) Mid-spectrum agent [13]

\*MSD: (1) Mine safety distance (NATO Agreed, 18 Nov 1996) [1, 2, 3]; (2) Minimum safe distance [12, 15]

MSDS: Manned Stand-off Detection System [15]

MSH: Millisievert per Hour [15]

\*MSL: (1) Mean sea level (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Missile [12, 15]

MSLINT: Missile Intercept [15]

\*MSV: (1) Minesweeping vessel (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Millisievert [13, 15]

\*MT: (1) Mobile terminal (NATO Agreed, 25 Jan 2010) [1, 2, 3]; (2) Motor transport (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Megaton [12, 15]

\*MTF: (1) Medical treatment facility (NATO Agreed, 31 Mar 2000) [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]; (2) Message text format (NATO Agreed, 17 May 2000) [1, 2, 3]

\*MWS: (1) Missile warning system (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Military weapon source [12, 15]

MXR: Mixture of radiation emissions [12, 15]

N: (1) Navy [3]; (2) Neutral [15]; (3) No, not conducted [15]; (4) Nuclear attack [15]

N/A: Not applicable [9]

\*NA: (1) Non-aligned (forces) (NATO Agreed, 9 Oct 2002) [1, 2, 3]; (2) Nerve agent [6]

\*NA5CRO: Non-Article 5 crisis response operation (NATO Agreed, 8 Aug 2003) [1, 2, 3, 5, 6]

\*NAAG: NATO Army Armaments Group (NATO Agreed, 27 Jun 1996) [1, 2, 3, 14]

\*NAC: (1) North Atlantic Council (NATO Agreed, 13 Dec 1994) [1, 2, 3]; (2) N-Acetylcysteine [6]

\*NaI: (1) Named area of interest (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Naval ammunition interchangeability (NATO Agreed, 20 Aug 1998) [1, 2, 3]; (3) Thallium-activated sodium iodide [13]

NARDD: Non Activated Radiological Dispersion Device [12, 15]

\*NATO: North Atlantic Treaty Organization (NATO Agreed, 11 Jun 2003) [1, 2, 3, 4, 7, 8, 9, 10, 11]

NATU: Natural Uranium [15]

\*NBC: Nuclear, biological and chemical (NATO Agreed, 25 Jan 2010) [1, 2, 3, 4, 5, 9]

NBC-AL: Deployable NBC analytical laboratory [10, 13]

NCRP: USA National Council on Radiation Protection and Measurements [13]

\*NCRS: NATO Crisis Response System (NATO Agreed, 25 Nov 2003) [1, 2, 3, 12]

\*NGO: Non-governmental organization (NATO Agreed, 26 Aug 2009) [1, 2, 3, 4, 5]

NEG: Negative Results [12]

NERV: Nerve agent [12, 13]

\*NEU: (1) Neutral merchant ship (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Neutron [15]

NEW: (1) New explosive (Not NATO Agreed, 1 Oct 2006) [1]; (2) New [12]

NF: Normalizing Factor [15]

\*NGO: Non-governmental organization (NATO Agreed, 26 Aug 2009) [1, 3, 10, 11]

NIL: No substance detected [12, 15]

NKN: Not known [12, 15]

N/L: Neutrophil / Lymphocyte (Ratio) [6]

NM: Nautical Mile [12, 15]

\*NMR: (1) National military representative (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) NATO military requirement (NATO Agreed, 12 Dec 1994) [1, 2, 3]; (3) Nuclear Magnetic Resonance [13, 15]

NO: Nursing Officer [6]

\*NOI: Notice of intention (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) No observable injury [9]

NONE: No Crater Present [15]

NOO: Number of microorganisms [15]

NOx: Oxides of Nitrogen [6]

\*NP: (1) Nepal (NATO Agreed, 1 Jan 2004) [1] (Cancelled, 1 Jan 2004) [2]; (2) Non-Persistent [12, 15]

\*NRF: NATO Response Force (NATO Agreed, 28 Feb 2003) [1, 2, 4]

\*NSA: (1) NATO Standardization Agency (Obsolete, 9 Mar 2015) [1, 2, 3, 7, 14]; (2) National shipping authority (NATO Agreed, 11 Jun 2003) [1, 2, 3]

\*NSO: NATO Standardization Office (NATO Agreed, 9 Mar 2015) [1, 2, 3, 10, 11]

NSWCDD: Naval Surface Warfare Center Dahlgren Division [14]

\*NTMS: NATO Terminology Management System (NATO Agreed, 25 Jan 2010) [1, 2, 3, 11]

NTO: NATO Terminology Office [11]

\*NUC: (1) NATO-Ukraine Commission (NATO Agreed, 19 Feb 1999) [1, 2, 3]; (2) Nuclear [12, 15]

\*NW: (1) Nuclear warfare (NATO Agreed, 11 Jun 2003) [1, 3, 6] (Cancelled, 1 Apr 2015) [2]; (2) Nuclear weapon [6]

NWH: Nuclear Warhead [15]

O: (1) Immediate (message) [15]; (2) Operationally Determined [15]

OBS: (1) Observed [15]; (2) Human observed [15]

\*OC: (1) Officer commanding (NATO Agreed, 18 Jun 2008) [1, 2, 3]; (2) Oleoresin Capasicum (Pepper Spray) [6]

OCF: Overall Correlation Factor [15]

OD: (1) Optical density (Not NATO Agreed, 1 Aug 2004) [1]; (2) Outside Dose Rate [15]

\*OE: (1) Operating environment (NATO Agreed, 1 Jan 2006) [1, 2, 3]; (2) Operational effectiveness (NATO Agreed, 1 Jan 2006) [1, 2, 3]; (3) Operational emergency (NATO Agreed, 1 Jan 2006) [1, 2, 3]; (4) Operational environment (NATO Agreed, 6 Jan 2012) [1, 2, 3, 11]; (5) Organizational element (NATO Agreed, 25 Mar 2009) [1, 2, 3]

OEF: Operational Exposure Guidance [15]

OEG: Operational exposure guidance [13]



OGA: Other Government Agency [11]

OHA: Operational Hazard Analysis [14]

OHFV: Omsk hemorrhagic fever virus [12, 15]

OISN: Official Incident Serial Number [15]

OMPA: Octamethyl pyrophosphoramidate [14]

\*OOA: Out-of-area (NATO Agreed, 29 Mar 1995) [1, 2, 3, 12]

\*OP: (1) Observation post (NATO Agreed, 8 Aug 2008) [1, 2, 3]; (2) Operation (NATO Agreed, 10 Apr 2014) [1, 2, 3]; (3) Organophosph-ate(-orous) [6]

\*OPCOM: Operation command (NATO Agreed, 2 Oct 1995) [1, 2, 3, 4]

\*OPCON: Operational control (NATO Agreed, 2 Oct 1995) [1, 2, 3, 4]

OPCW: Organisation for the Prohibition of Chemical Weapons [6]

OPIDN: Organophosphorous Induced Delayed Neuropathy [6]

\*OPLAN: Operational Plan (NATO Agreed, 25 Mar 2009) [1, 2, 3, 4, 12]

\*OPP: Operations planning process (NATO Agreed, 18 Jan 2013) [1, 2, 3, 11]

ORA: Operational Risk Assessment [14]

OTAN: Organisation du Traité de l'Atlantique Nord [3, 10]

\*OTr: (1) Optical tracking (NATO Agreed, 1 Jan 2006) [1, 2, 3]; (2) Other [15]; (3) Other substance [12, 15]

OTSB: Orientia tsutsugamushi [12, 15]

P: Persistent [12, 15]

P2S: Pralidoxime Mesilate [6]

PAGE: Poly Acrylamide Gel Electrophoresis [15]

PALT: Palytoxin [12, 15]

\*PAR: (1) Population at risk (NATO Agreed, 5 Jul 2003) [1, 2, 3, 4, 9]; (2) Post-attack reconnaissance (NATO Agreed, 5 Jul 2003) [1, 2, 3]; (3) Precision approach radar

(NATO Agreed, 11 Jun 2003) [1, 2, 3]; (4) Pulse acquisition radar (NATO Agreed, 12 Dec 1994) [1, 2, 3]

PBA: Pharmaceutical Based Agent [6]

\*PC: (1) Political committee (NATO Agreed, 27 Jun 1996) [1, 2, 3]; (2) Petroleum Committee (NATO Agreed, 18 Nov 2011) [2, 3]; (3) Precious cargo (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (4) Particle counting [15]

\*PCC: (1) Partnership Coordination Cell (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Planning coordination conference (NATO Agreed, 11 Jun 2003) [1] (Cancelled, 14 Aug 2015) [2]; (3) Prague Capabilities Commitment (NATO Agreed, 1 Feb 2007) [1, 2, 3]; (4) Premature chromosome condensation [6]

PCP: Phencyclidine [6]

PCR: Polymerase Chain Reaction [6, 13, 15]

\*PD: (1) Periscope depth (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Point detonating (NATO Agreed, 16 Feb 2001) [1, 2, 3]; (3) Personal dosimeter [15]

PDT: (1) Pre-deployment training [7]; (2) Probability density table [9]

PEAK: Peak [12, 15]

\*PECC: Patient evacuation coordination centre (NATO Agreed, 5 Jul 2003) [1, 2, 3, 4, 5]

PEEP: Positive End Expiratory Pressure [6]

PENT: Penetrating agent [12, 15]

\*PF: Protection factor (NATO Agreed, 11 Jun 2003) [1, 2, 3, 6, 12, 13, 15]

PFIB: Perfluoroisobutylene [6]

\*PfP: Partnership of Peace (NATO Agreed, 25 Mar 1995) [1, 2, 3, 4, 10, 14]

PFU: Plaque forming units [9]

PHAST: Process Hazard Analysis Software Tools [14]

PHC: Primary health care [7]

PHEC: Pre-hospital emergency care [7]

PHEIC: Public Health Emergency of International Concern [6]

\*PID: (1) Probability of identification (NATO Agreed, 9 Oct 2002) [1, 2, 3]; (2) Photo Ionisation Detector [15]

\*PIP: (1) (capability) package implementation plan (NATO Agreed, 25 Aug 1998) [1, 2, 3]; (2) Project implementation plan (NATO Agreed, 28 Jun 1996) [1, 2, 3]; (3) Pipe or pipeline [12, 15]

\*PIR: (1) Periodic intelligence review (Deleted, 25 Aug 2014) [1, 2]; (2) Pressure ignition rocket (Deleted, 25 Jan 2010) [1, 2]; (3) Priority intelligence requirement (NATO Agree, 19 Apr 1995) [1, 2, 3]; (4) Priority information requirements [11]

\*PLT: (1) Partnership liaison team (NATO Agreed, 27 Nov 1998) [1, 2, 3]; (2) Planning and liaison team (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Plant [15]

\*PM: (1) Precautionary measure (NATO Agreed, 19 Nov 1996) [1, 2, 3]; (2) Preventive maintenance (NATO Agreed, 19 Apr 1995) [1, 2, 3]; (3) Project manager (NATO Agreed, 18 Nov 1996) [1, 2, 3]; (4) Provost marshal (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (5) Afternoon [15]

PM147: Promethium [15]

PMT: Photomultiplier tube [13]

PO210: Polonium [15]

\*PoE: (1) Port of embarkation (NATO Agreed, 25 Jan 2010) [1, 2, 3]; (2) Point of entry/exit (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (3) Point of exposure [6]

POOL: Large Quantity of Still Liquid [12, 15]

POS: (1) Possible [12]; (2) Positive Results [15]

\*POW: (1) Prisoner of war (NATO Agreed, 28 Jun 1996) [1, 2, 3, 5]; (2) Programme of work (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Point of wounding [6]

PPB: Parts per Billion [15]

PPE: Personal protective equipment (Deleted, 28 Jul 2008) [1, 6]

PPM: Parts per Million [6, 15]

PPSG: Physical Protection Sub Group [14]

PRE: Presumptive [15]

PRO: Probable [12]

PROV: Provisional [15]

\*PS: (1) Planning situation (NATO Agreed, 9 Oct 2003) [1, 2, 3]; (2) Chloropicrin [6, 12, 15]

psi: Pounds per square inch [6, 9]

PTP: Predicted target point [12, 15]

\*PTSD: Post-traumatic stress disorder (NATO Agreed, 5 Jul 2003) [1, 2, 3, 6]

\*PU: (1) Participating unit (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Plutonium [15]

PU238: Plutonium [15]

PUFF: Single Release of a Cloud [12, 15]

\*QA: Quality assurance (NATO Agreed, 11 Jun 2003) [1, 2, 3, 13]

QAU: Quality assurance unit [13]

QC: Quality control [13]

R: (1) Radiological [13]; (2) Roentgen [13]; (3) Radiological incident [15]

R0: Reproduction Number (Ratio) [6]

RA226: Radium [15]

RAD: (1) Radiation absorbed dose [3]; (2) Radiological [12, 15]

RADIAC: Radioactivity detection, indication and computation [3, 13]

\*RAM: (1) Rockets, artillery, and mortars (NATO Agreed, 5 Jan 2012) [1, 2, 3]; (2) Radar absorbent material (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Reliability and maintainability (NATO Agreed, 22 Nov 1996) [1, 3]; (4) Radioactive material [13]

\*RAP: (1) Recognized air picture (NATO Agreed, 13 Dec 1994) [1, 3]; (2) Reliable acoustic path (NATO Agreed, 16 Jun 2008) [1, 3]; (3) Readiness action plan (NATO Agreed, 14 Aug 2015) [2, 3]; (4) Risk assessment package [14]

RBC-AChE: Red Blood Cell Acetylcholinesterase [6]

RBE: Relative Biological Effectiveness [6, 9]

RBIA: Real Time Bio specific Interaction Analysis [13]

\*RC: (1) Reception centre (NATO Agreed, 5 Aug 2003) [1, 2, 3]; (2) Reduced charge (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Regional conflict (NATO Agreed, 14 Mar 1995) [1, 2, 3]; (4) Repair coordinator (NATO Agreed, 18 Jun 1996) [1, 2, 3]; (5)

Required capability (NATO Agreed, 28 Jun 1996) [1, 2, 3]; (6) Response category [6]; (7) Regional command [12]

RCA: Riot Control Agent [6]

\*RCP: (1) Recognized commercial vessel picture (NATO Agreed, 9 Nov 2002) [1, 2, 3]; (2) Radiological Contamination Probe [15]

RCT: Reactor [12, 15]

\*RD: (1) Ratification draft (NATO Agreed, 22 Oct 2010) [1]; (2) Remote Detection [15]

\*R&D: Research and development (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Reconstruction and development [4]

\*RDD: (1) Radiological dispersal device (NATO Agreed, 1 Dec 2004) [1, 2, 3, 5, 6, 8, 9, 12, 13, 15]; (2) Required delivery date (NATO Agreed, 16 Jun 2008) [1, 2, 3]

RDOIT: Rapidly Deployable Outbreak Investigation Team [5, 6, 7, 10]

RDPS: Radiological Device Point Source [12, 15]

RDS: Radius [15]

REAC/TS: Radiation Emergency Assistance Centre / Training Site [6]

\*RECCE: Reconnaissance (NATO Agreed, 20 Apr 1995) [1, 2, 3, 12, 15]

RED: Radiological Exposure Device [6]

Rem: Roentgen equivalent man [6, 9]

\*RES: (1) Radar environment simulation (NATO Agreed, 20 Apr 1995) [1, 2, 3]; (2) Radiation exposure state (NATO Agreed, 20 Apr 1995) [1, 2, 3, 15]; (3) Radiation exposure status [13]

\*RFI: (1) Radio-frequency interference (NATO Agreed, 12 Dec 1994) [1, 2, 3]; (2) Request for information (NATO Agreed, 20 Apr 1995) [1, 2, 3, 4, 12]

\*RHQ: (1) Rear headquarters (NATO Agreed, 29 Mar 1995) [1, 2, 3]; (2) Regional headquarters [12]

RIA: Radioimmunoassay [13, 15]

\*RIC: (1) Repatriation information centre (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Rickettsiae [12, 15]

RICB: Rickettsia rickettsia [12, 15]

RICT: Ricins [12, 15]

RITB: Rickettsia typhi [12, 15]

RKT: Rocket [12, 15]

RLD: Railroad Car [12, 15]

\*RM/RoM: (1) Restriction of movement (formerly called ROM) (NATO Agreed, 28 Oct 2013) [1, 2, 3, 5, 6, 10]; (2) Risk management (NATO Agreed, 31 Aug 2012) [1, 2, 3]

\*RMP: (1) Recognized maritime picture (NATO Agreed, 16 Jun 2008) [1, 2, 3]; (2) Risk management process [11]

RNA: Ribonucleic acid [13]

RNDSG: Radiological and Nuclear Defence Sub-group [15]

RNP: Release from nuclear power plant [12, 15]

RNR: Research Nuclear Reactor [12, 15]

\*ROE: Rules of engagement (NATO Agreed, 15 May 1995) [1, 2, 3, 11]

ROI: Region of interest [13]

ROP: Recommended Operating Procedure [13]

ROTA: (1) Release other than by attack (Deleted, 25 Jan 2010) [1, 2, 5]

\*RP: (1) Reference point (NATO Agreed, 7 Feb 2011) [1, 2, 3]; (2) Rocket projectile (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Provisional acceptance (NATO Agreed, 11 Jun 2003) [1]; (4) Reporting post (NATO Agreed, 20 Apr 1995) [1, 2, 3]; (5) Release point (NATO Agreed, 20 Apr 1995) [1, 2, 3]; (6) Red phosphorous [6]

\*RS: (1) Requirements statement (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Russia (NATO Agreed, 11 Jun 2003) [1] (Cancelled, 11 Jun 2003) [2]; (3) Role specialization (Deleted, 13 Jan 1999) [1] (NATO Agreed, 12 Feb 2014) [2, 3]; (4) Raman spectrometry [13]; (5) Radius of safety [15]

RSDL: Reactive Decontamination Lotion [6]

\*RSI: (1) Radiation status indicator (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Rapid Sequence Induction [6]

\*RSN: Role Specialist Nation (NATO Agreed, 18 Mar 1998) [1, 2, 3, 4]

\*RSOI: Reception, Staging, Onward Movement and Integration (NATO Agreed, 14 Feb 2014) [1, 2, 3, 4]

\*RTD: Return to duty (NATO Agreed, 25 Jun 2003) [1, 2, 3, 9]

RT-PCR: Reverse transcriptase polymerase chain reaction [13]

\*RTS: (1) Radar tracking station (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Revised trauma score [6]

RURH: Ruthenium/Rhodium [15]

RUP: Catastrophic rupture of a tank [12, 15]

RVFV: Rift Valley fever virus [12, 15]

RWM: Radiological Waste Material [12, 15]

RWS: Radioactive waste storage [12, 15]

S: Stable [15]

\*SA: (1) Situational awareness (NATO Agreed, 18 Nov 2011) [1, 2, 3, 5]; (2) Security authority (NATO Agreed, 17 May 2000) [1, 2, 3]; (3) Selective availability (NATO Agreed, 25 Apr 1995) [1, 2, 3]; (4) Small arms (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (5) Special assignment (NATO Agreed, 25 Apr 1995) [1, 2, 3]; (6) Staging area (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (7) Surface-to-air (NATO Agreed, 24 Apr 1995) [1, 2, 3]; (8) Arsine [12, 15]

SALB: Salmonella spp [12, 15]

SAME: Same [15]

SARS: Severe Acquired Respiratory Syndrome [6]

SATB: Salmonella Typhi [12, 15]

SAXT: Saxitoxins [12, 15]

SBD: (1) Simple Bio Detection Kit [15]; (2) Satellite-Based Detection [15]

\*SC: (1) Screen commander (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Sea current (NATO Agreed, 19 Jun 1996) [1, 2, 3]; (3) Security Council (of the UN) (NATO Agreed, 29 Nov 2000) [1, 2, 3]; (4) Special corridor (NATO Agreed, 25 Jan 2010) [1, 2, 3]; (5) Stockholm Conference (NATO Agreed, 11 Jun 2003) [1, 2]; (6) Strategic command (NATO Agreed, 31 Jan 2014) [1, 2, 3, 4, 12]; (7) Strategic commander (NATO Agreed, 16 Sep 1998) [2, 3]; Sub-committee (NATO Agreed, 17 May 2000) [1, 2, 3]

SC75: Scandium [15]

\*SCBA: Self-contained breathing apparatus (NATO Agreed, 16 Jun 2008) [1, 2, 3, 6, 13]

\*SCC: (1) SHAPE Command Centre (NATO Agreed, 29 Mar 1995) [1, 2, 3]; (2) Shipping coordination centre (NATO Agreed, 7 Feb 2011) [1, 2, 3]; (3) Surveillance coordination centre (NATO Agreed, 29 Mar 1995) [1, 2, 3]; (4) System coordinate centre (NATO Agreed, 15 May 1995) [1, 2, 3]; (5) Sub Collection Centre [12, 15]

SCD: (1) Security coding device (Deleted, 25 Jan 2010) [1, 2]; (2) Simple Chemical Detection Kit [15]

SCIAD: Scientific Advisor [6]

SCRUB: Scrubby Vegetation [12, 15]

\*SDC: (1) Strategic direction centre (NATO Agreed, 19 Sep 1997) [1, 2, 3]; (2) Simple Chemical Detection Kit [15]

SDYB: *Shigella dysenteriae* [12, 15]

SEA: Sea [15]

SEB: Staphylococcal Enterotoxin B [6, 9]

\*SEC: (1) Submarine element coordinator [1, 2, 3]; (2) Second [15]

SEIRP: Susceptible, Exposed and infected, Infectious, Removed, and Prophylaxis efficacious [9]

SFE: Supercritical fluid extraction [13]

SHC: Secondary health care [4]

SHL: Shell [12, 15]

SHP: Ship [12, 15]

SI Units: International System of Units [13]

SIBCA: Sampling and identification of biological and chemical agent [12, 13, 15]

\*SIBCRA: Sampling and identification of biological, chemical and radiological agents (NATO Agreed, 20 Nov 2014) [1, 2, 3, 6, 7, 10, 11, 12, 13, 15]

\*SIRA: Sampling and identification of radiological agents (NATO Agreed, 10 Apr 2014) [1, 2, 8, 13, 15]

SIRS: Severe Inflammatory Response Syndrome [6]

SIT: Situation Report [12, 15]



\*SITREP: Situation Report (NATO Agreed, 1 Nov 1968) [1, 2, 3, 12, 15]

\*SL: (1) Sea level (NATO Agreed, 27 Apr 1995) [1, 2, 3]; (2) Sustainability and logistics (NATO Agreed, 9 Dec 2003) [1, 2, 3]; (3) Standard level [15]

\*SM: (1) Scatterable mine (NATO Agreed, 16 Jun 2008) [1, 2, 3]; (2) Statute mile [15]

SMLBIO: Biological – Small (Less than 1 kilogram) [12, 15]

SMLCHEM: Chemical - Small (200 litres or kilograms or less) [12, 15]

SMLRAD: Radiological - Small (Evidence of Disruption/Intact Package or Device) [12, 15]

\*SMP: (1) Safety management plan (NATO Agreed, 1 Feb 2007) [1, 2, 3]; (2) Self-maintenance period (NATO Agreed, 18 Jun 1996) [1, 2, 3]; (3) Sub-munitions Missile Payload (Sub-munitions Warhead) [15]

\*SN: Sending nation (NATO Agreed, 1 Jan 2006) [1, 2, 3, 12]

SNTRY: Automated Chemical and Biological Agent Detector [15]

\*SOF: (1) Special operations forces (NATO Agreed, 4 Feb 2011) [1, 2, 3, 4]; (2) Status of forces (NATO Agreed, 11 Jun 2003) [1, 2, 3]

\*SOFA: Status of Forces Agreement (NATO Agreed, 12 Dec 1994) [1, 2, 3, 4, 10]

SOIL: Soil Sample [12, 15]

SOLID: Solid Sample [12, 15]

\*SOP: Standing operating procedures (NATO Agreed, 16 Jan 2008) [1, 2, 3, 4, 8, 10, 12, 13, 15]

\*SP: (1) Secondary participant (NATO Agreed, 11 Feb 2014) [1, 2, 3]; (2) Standardization proposal (NATO Agreed, 22 Oct 2010) [1, 2]; (3) Supply point (NATO Agreed, 25 Oct 2010) [1, 2, 3]; (4) Start point (NATO Agreed, 22 Jan 2010) [1, 2, 3]; (5) Self-propelled (NATO Agreed, 16 Feb 2001) [1, 2, 3]; (6) Sensitive point (NATO Agreed, 27 Apr 1995) [1, 2, 3]; (7) Service pack [14]

SPE: Solid Phase Extraction [13]

SPEC: Radiation Spectrometer [15]

SPILL: Small Quantity of Still Liquid [12, 15]

SPME: Solid phase micro-extraction [13]

\*SPOD: Seaport of debarkation (NATO Agreed, 25 Jan 2010) [1, 2, 3, 4]

\*SPOE: Seaport of embarkation (NATO Agreed, 17 Apr 1995) [1, 2, 3, 4]

\*SPR: (1) Single point refueling (NATO Agreed, 16 Jun 2008) [1, 2, 3]; (2) Spray [12, 15]; (3) Surface plasmon resonance [13]

SPRAY: Spraying [12, 15]

SR90: Strontium [15]

\*SRD: Standard-related document (NATO Agreed, 22 Oct 2010) [1, 2, 9]

\*SRF: (1) Strategic reserve force (NATO Agreed, 25 Mar 2009) [1, 2, 3]; (2) Spent Reactor Fuel [12, 15]

\*SS: (1) surface-to-surface (NATO Agreed, 12 Dec 1994) [1, 2, 3]; (2) Serial strike number or incident strike number [12]

S/S: Signs and symptoms [9]

\*STANAG: NATO standardization agreement (NATO Agreed, 22 Oct 2010) [1, 2, 3, 4, 5, 9, 10, 13]

\*STANREC: NATO standardization recommendation (NATO Agreed, 1 Apr 2011) [1, 2, 14]

STARC: Simple, Timely, Accurate, Reliable and Credible [8]

STET: Staphylococcal Enterotoxins [12, 15]

STK: Stockpile [12, 15]

STN: Short ton [15]

STRIKWARN: (1) Strike warnings [13]; (2) Nuclear Strike Warning Message [15]

SUBS: Sub surface (SUBS is only used in NUC reports) [12, 15]

\*SURF: (1) Standard underway replenishing fixture (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Surface (release on ground impact) [12, 15]

SUS (susp.): Suspected [15]

Sv: Sievert [6, 9]

T: Thickened agent [15]

TBq: Terabecquerel ( $10^{12}$  becquerels) [9]

\*TCN: Troop-contributing nation (NATO Agreed, 1 Jan 2006) [1, 2, 3, 4]

\*TE: (1) Task element (NATO Agreed, 27 Apr 1995) [1, 2, 3]; (2) Training equipment (NATO Agreed, 29 Mar 1995) [1, 2, 3]; (3) Time to Emesis (Vomiting) [6]

TECDOC: Technical document [13]

TETT: Tetradoxin [12, 15]

\*TF: (1) Task force (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (2) Temporarily-filled (NATO Agreed, 25 Jan 2010) [1, 2, 3]; (3) Terrain-following (NATO Agreed, 14 Jan 1999) [1, 2, 3]; (4) Transmission factor [15]

\*TG: (1) Task group (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Tear gas [12, 15]

TH232: Thorium [15]

TIB: Toxic Industrial Biological [6, 11, 12, 13, 15]

\*TIC: (1) Tactical intelligence centre (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Toxic industrial chemical (NATO Agreed, 11 Jun 2003) [1, 2, 3, 6, 10, 11, 12, 13, 14, 15]

TID: Thermionic detection [13]

\*TIH: Toxic industrial hazard (NATO Agreed, 25 Jan 2010) [1, 2, 3, 15]

\*TIM: Toxic industrial material (NATO Agreed, 14 Dec 2015) [2, 5, 6, 7, 10, 11, 12, 13, 14, 15]

\*TIR: (1) Target-illuminating radar (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Toxic industrial radiological (NATO Agreed, 14 Dec 2015) [2, 6, 11, 12, 13, 15]

TLD: Thermoluminescent Dosimeter [6]

TM170: Thulium [15]

TN: (1) Technical notification [3]; (2) True North [15]

TNK: Storage Tank (Stationary or mobile) [12, 15]

TNO: Netherlands Organisation for Applied Scientific Research [14]

TNT: Trinitrotoluene [6]

\*TO: (1) Technical order (NATO Agreed, 27 Apr 1995) [1, 2, 3]; (2) Togo (NATO Agreed, 27 Apr 1995) [1] (Cancelled, 27 Apr 1995) [2]; (3) Training objectives [7]

\*TOA: (1) Time of arrival (NATO Agreed, 1 Dec 2004) [1, 2, 3]; (2) Transfer of authority (NATO Agreed, 2 Oct 1995) [1, 2, 3, 4, 12]

TON: Ton [15]

TOP: Cloud top [12, 15]

\*TOR: (1) Terms of reference (NATO Agreed, 16 May 1995) [1, 2, 3]; (2) Time of receipt (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (3) Torpedo [12, 15]

TOX: Toxin [12, 15]

\*TPT: (1) Third-party targeting (NATO Agreed, 27 Apr 1995) [1, 2, 3]; (2) Road transport [12, 15]

TRMT: Trichothecene mycotoxins [12, 15]

\*TRU: (1) Target reporting unit (NATO Agreed, 27 Apr 1995) [1, 2, 3]; (2) Transuranic element [13]

\*TTF: Terminology tracking form (NATO Agreed, 25 Mar 2009) [1, 3, 10]

\*TTP: Tactics, techniques and procedures (NATO Agreed, 25 Mar 2009) [1, 3, 10]

TTTF: TIC/TIM Task Force [14]

U: (1) Unstable [15]; (2) Unknown [15]

U240: Uranium [15]

\*UAS: Unmanned aircraft system (NATO Agreed, 5 Jan 2012) [1, 2, 3]; (2) Un-manned aerial survey [15]

\*UAV: Unmanned aerial vehicle (NATO Agreed, 16 May 1995) [1, 3, 13] (Cancelled, 1 Feb 2011) [2]

UGPK: microgram/70 kg person [15]

\*UGS: (1) Unattended ground sensor (NATO Agreed, 11 Jun 2003) [1, 2, 3]; (2) Un-manned ground survey [12, 15]

UMDS: Un-Manned Detection System [12, 15]

UMPD: Un-Manned Point Detection [12, 15]

UMS: Un-Manned Survey [15]

UMSD: Un-Manned Stand-off Detection [15]

\*UN: United Nations (NATO Agreed, 25 Mar 2009) [1, 2, 3, 5, 11]

UNAMB: Unambiguous Identification [15]

UN ID: Four-digit United Nations Substance Identification Number. It is an international standard number which identifies the substance concerned [12, 15]

URBAN: Urban [15]

USH: Microsievert per hour [15]

USV: Microsievert [15]

\*UTM: Universal transverse mercator (map/grid) (NATO Agreed, 27 Apr 1995) [1, 2, 3, 12, 15]

UV: Ultraviolet [6, 13]

V: V-agent [12, 15]

VAB: Variable [15]

VALLEY: Valley [15]

VAP: Vapour [12, 15]

VARV: Variola virus [12, 15]

VBRAD: Vehicle Borne Radiation Detector [12, 15]

VEE: Venezuelan Equine Encephalitis [6]

VEEV: Venezuelan equine encephalitis virus [9, 12, 15]

VEG: Vegetation Sample [12, 15]

VHF: Viral Haemorrhagic Fever [6]

VICB: Vibrio cholera [12, 15]

VIR: Viral [12, 15]

VLSTRACK: Vapor, Liquid, Solid Tracking [16]

VMT: Vomiting agent [12, 15]

VX: O-Ethyl-S-(2-diisopropylaminoethyl) methyl phosphonothiolate [9, 12, 15]

W: West [15]

WARN: CBRN Warning due to Friendly Targeting of a CBRN Infrastructure [15]

WATER: Water Sample [12, 15]

WCC: White Cell Count [6]

WEEV: Western equine encephalitis virus [9, 12, 15]

WGE: Working Group of Experts [14]

\*WGS: World geodetic system (NATO Agreed, 14 Nov 1996) [1, 2, 3, 15]

WHO: World Health Organisation [6, 10]

\*WIA: Wounded in action (NATO Agreed, 27 Apr 1995) [1, 2, 3, 9]

WIA(1<sup>+</sup>): Wounded in action (Severity Level 1 (“Mild”) or greater) [9]

WIA(2<sup>+</sup>): Wounded in action (Severity Level 2 (“Moderate”) or greater) [9]

WIA(3<sup>+</sup>): Wounded in action (Severity Level 3 (“Severe”) or greater) [9]

WK: Week [15]

\*WMD: Weapon of mass destruction (NATO Agreed, 20 Nov 2014) [1, 2, 3, 4, 11, 13]

\*WOO: (1) Wounded in operations (NATO Agreed, 7 Nov 2011) [1, 2, 3]; (2) Window of opportunity [6]

WOODS: Wooded Terrain [12, 15]

\*WP: (1) Waypoint (NATO Agreed, 1 Feb 2007) [1, 2, 3]; (2) White phosphorus (NATO Agreed, 16 Feb 2001) [1, 2, 3, 6]; (3) Working paper (NATO Agreed, 29 Mar 1995) [1, 2, 3]

WR: Radiation Weighting Factor [6]

\*W&R: Warning and reporting (NATO Agreed, 5 Jul 2003) [1, 2, 12, 15]

\*WRC: (1) World Radiocommunication Conference (NATO Agreed, 9 Dec 2003) [1, 2, 3]; (2) Warning and reporting centre [15]

WST: Waste [15]

WT: Tissue Weighting Factor [6]

WW: World War [6]

X: Character (N+AN) [15]

XLGBIO: Biological - Extra Large (Greater than 100 kilograms) [12, 15]

XLGCHEM: Chemical - Extra Large (Greater than 50000 litres or kilograms) [12, 15]

XLGRAD: Radiological - Extra Large (Explosions and Fire/Damaged Package and Contamination) [12, 15]

Y: Yes, conducted [15]

YB169: Yturbium [15]

YELV: Yellow fever virus [12, 15]

YPEB: Yersinia pestis [12, 15]

YD: Yard [15]

Z: Flash (message) [15]

ZCC: Zone Control Centre [12, 15]





## Appendix C. Illustrations

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